ENGINEERING and MINING JOURNAL.

VOL. XXVI., No. 7.

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THE SCIENTIFIC PUBLISHING CO., PUBLISHERS,
27 Park Place, New York.

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NOTICE.

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HEAVY BLAST AT GLENDON.

As we go to press, we learn that the heavy blast in the limestone quarry of the Glendon Iron Company, near Easton, Pa., was fired on Thursday evening, at 7.45 o'clock, with complete success. The charge was 12,000 lbs. (6 tons) of mortar powder—probably the largest blast, not subaqueous, that has ever occurred in this country. It was a complete success, there being little noise, jar, or smoke, while it is estimated that 60,000 tons of rock were displaced. Much interest will attach to the details, which we shall at a future time set before our readers. Mr. FRANK FIRMSTONE, Superintendent of the Glendon Company, was skillfully assisted in the undertaking by Messrs. ELLIS CLARK and FRANK C. BLAKE.

CONCILIATION AND ARBITRATION.

THE ENGINEERING AND MINING JOURNAL has, as is well known, always advocated, with strict impartiality and justice, the cause of the workmen, and has ever been ready to give their views a prominent place in its columns. We believe that trades-unions, though often—when managed by the designing or ignorant among the workmen for their personal benefit—productive of great injury to their members, have, on the whole, benefited the working classes and improved their condition. We recognize the right of workingmen to strike, either singly or in a body, whenever their wages or the terms of their employment are unsatisfactory. And we recognize a corresponding right of the employers to discharge workmen, either singly or in a body, under similar circumstances. But under no condition can we justify the employment of force or intimidation, by either employers or workmen, to prevent those in their respective classes willing to work from doing so.

Strikes have, no doubt, sometimes been necessary as the only means of obtaining just demands ; but even when successful in attaining the objects for which they were made, they are always disastrous to the men who undertake them. Strikers sacrifice themselves, sometimes it may be for the benefit of posterity or of their fellows who do not strike, but they always sacrifice their own interests. This fact is becoming well understood by the more intelligent workingmen, and hence we see that trades-unions, wherever under the control of the best men, are earnest advocates of arbitration as a means of settling disputes between employers and employés

We have constantly advocated the establishment of these local boards of conciliation, and the present seems a most opportune time for their establishment in the coal-mining regions.

It is true the coal trade is in a deplorable condition, and in the anthracite trade, at least, it would probably be a positive benefit to the operators were the men to stop work throughout the region for a full month. The companies can not be much alarmed at any prospect of a general strike ; but the men, who are ill-prepared for a contest, would certainly be starved into submission, and thus be the sole and heavy losers by adopting this dangerous cure for real or imaginary ills. This condition of things will not, however, be of long duration. Even now, with an output less than we have had for six years, the supply of labor at the anthracite mines is, in many places, only just sufficient for present needs, and, with any considerable improvement in trade, it would be quite inadequate to meet the demand for coal which would ensue. The natural consequence of a scarcity of laborers at the mines—a state of things which will be known to and appreciated by the workmen themselves quite as soon and as fully as by the employers—will be successive demands for higher wages ; these must be accorded, or strikes will occur, and the consequence in either case will be rapidly-increasing prices for anthracite, till these, in their turn, retard the revival of industry, and diminish the demand for fuel. It is true, increased wages would attract labor to the coal mines ; but this is necessarily a slow remedy, for the labor comes only after wages have grown to such excessive rates as are exceedingly injurious to the whole industry of the country.

The dangers we foreshadow here are by no means imaginary, and we urge, in the interest of the workmen, the operators, and the struggling industry of the country, that effectual measures be taken to avoid the dangers incident to strikes. A successful strike in the anthracite region would probably precipitate a series of strikes throughout the country, wholly regardless of the different conditions obtaining in the different industries.

No more rational and successful method of reconciling differences arising between employers and employés has yet been found than the submission of these questions to boards of conciliation and arbitration for final decision, and we earnestly urge upon both the workmen and the operators in the coal regions the consideration of this question, and the adoption of this preventive, before any disputes come up to imbitter the friendly relations now existing between them.

ARNOLD HAGUE.

The many friends of Mr. ARNOLD HAGUE will be interested to know that he has been engaged by the Chinese government to examine and report upon the mineral resources and mining industry of the Celestial Empire, and sailed from San Francisco on Thursday, the 15th inst., by the steamer *Gaelic*, to enter upon his duties. He expects to take the field immediately upon arrival, and continue active operations until about the first of December, when he will go into winter quarters. The excellent work performed by Mr. HAGUE in connection with KING'S Survey of the Fortieth Parallel, and more recently in Guatemala, is a guaranty of his fidelity and skill in this new undertaking. The Chinese have got a good man, and we hope they will treat him as well as he deserves, and not according to the manner in which their citizens are too often treated among us.

Those same almond-eyed, enigmatical barbarians, by the way, are showing themselves singularly shrewd in their quiet pursuit of whatever they think valuable in Occidental civilization. Far less mercurial and impressible, and therefore far more conservative, apparently, than the Japanese, the Chinese are, nevertheless, likely to make surer if not speedier progress. The islanders adopt all sorts of new ideas with a whoop-la ! and get tired of them quickly. Or else, according to another explanation, the jealousy of parties in Japan is so great that when the party of progress is able to carry the first stages of a new measure—to buy the machines or import the experts—the party of reaction musters strength enough to force a stand-still at that point. The continental Chinese, on the other hand, watch and study well before they decide. Europeans are no novelty to them. They realize their position and their strength, and with an unimpassioned persistence that has something of the terrible about it, they go straight on, regardless of "the Chinese question" as it affects other races, to acquire, one by one, all the elements of power which any race possesses, and to use them, in Asia at least, for the aggrandizement of Chinese influence. They have already got control of commerce in Chinese ports ; they are running Chinese steamers in ruinous competition with European ones ; before long their ambassadors will go round the world on their own ships-of-war ; and a Chinese navy will protect the rights of their citizens in foreign lands. It is fortunate for our internal peace that the Chinese government does not care to have the emigration of its subjects to the United States promoted. But the spectacle is a curious one. We, the superior race, failing in competition with the Chinese on our own soil, and obliged, as we profess, to drive them out of the country ; they, on the other hand, when they find English and American and other foreign merchants in their country, quietly learning the tricks of trade for themselves, and crowding the foreigners out of the market with no other force than that of their own superior management. The abuse heaped upon them by some of our American political parties does not move them an atom. Between the frothy and paroxysmal roarings of DENNIS KEARNEY, the mild tones of the Chinee are heard, saying to Mr. ARNOLD HAGUE, "You sabbee locks ; you come 'long me !" *Fas*

est ab hoste doceri—a wise maxim, which the heathen appear to obey more closely than Christians, though the latter are bound to go much further than this rather selfish and Poor-Richard-ish precept. *

VERTICAL MINE-BOUNDARIES.

We should be glad to hear from other correspondents, besides such as have already written to us, concerning the question of vertical boundary-planes for mining claims. It would be specially interesting to know the sentiments of miners in different districts, and to gain some notion of the extent of the desire which manifests itself in some quarters for a radical change in the present system. We invite those who are opposed to such a change, as well as those who favor it, to express their opinions and give their reasons. To the latter class, we recommend the preparation of petitions, not for the change itself (for which we fear public sentiment is not yet ripe), but for the thorough examination of the question by a commission composed in part of experts in western mining and in part of experts in law-making. Sooner or later, it is likely, we shall come to the system now pursued almost everywhere else in the world, and actually operating successfully among nineteen twentieths of our population. Thirty-eight millions of Americans discover, explore, buy, and sell mineral property on simple geodetic principles, giving to each proprietor his surface, and all that underlies it to the earth's center, by a title superior to the theories of science or the mystifications of fraud. It can not be that the other two millions will forever endure the opposite system, even though it has some partly compensatory advantages. They need to be educated to the comparison of the two; and Congress needs, before changing the law, to ascertain, in every practical way, the effect and the success of such change. *

THE LABOR PARTY ON THE STAND.

The Congressional Committee, of which Hon. A. S. Hewitt is chairman, and which for five days has been sitting in New York to hear the views of the delegates (self-appointed and other) of the various sections of the "labor" reformers, has done the community a double service already. It has furnished a good deal of amusement to enliven the dog-days, and it has suddenly enlightened the workingmen themselves on the subject of their own ignorance. As for the amusement, it was in the nature of a farce. The "funny men" of the press have written articles numerous and humorous about it, but nothing equal to the simple reports of the committee's proceedings. It is hard, if not impossible, to burlesque the ridiculous; and no joke or satire can add to the ludicrous effect produced by the pompous dogmatism and speedy discomfiture of almost every volunteer statesman who has appeared before the committee. As for the enlightenment, it has revealed to the workingmen themselves that their noisiest leaders do not understand their case, can not agree on symptoms or remedies, and are not fit to be trusted. One class of these leaders, from Mr. Dennis Kearney, who stands convicted of stealing another man's work and putting it forward as his own (for example, his "eloquent" passage about Butler, taken bodily from an old speech of Tom Fitch's on Blaine), down to the latest of his imitators, is composed of the worst demagogues. Another class comprises sincere but superficial theorists, scarely possessed, one would say, of that "little learning" which is "a dangerous thing."

But the men who come forward most eagerly, and harangue most loudly, are not the true representatives of the workingmen, even of those who are more or less in error. The workingmen themselves are now confessing this. On the other hand, it is not safe to argue from the apparent lack of agreement and of common sense among these orators that there are no elements of real danger in the political situation. The prelude just completed has admirably prepared the public mind to receive the more important proceedings of the committee. These are foreshadowed in its circular, which evidently aims at precise information concerning the actual extent of present distress. That there is distress, no one denies. Whether it is greatest among employers or employés; whether it is due to the overcrowding of certain lines of labor, and chiefly confined to these, or affects all classes alike; whether it results from lack of currency or from the wages system; and, above all, how great it really is, are questions which lie at the threshold of all inquiry—and the last is the first. It will probably be found that the number of unemployed men, for instance, has been exaggerated. If the committee, by an honest compilation of facts, commanding general confidence, should succeed in defining the symptoms of the disease which affects the body politic, it would, by that achievement alone, take away the occupation of many quacks. This subject must be thoroughly discussed by the fireside as well as from the platform, and the thing most needed is a trustworthy magazine of facts for such a discussion.

Already the Socialists, Communists, and what not, are preparing to denounce the committee in advance, so as to break the force of its report. But these tactics will not succeed. The people want light; and they will use their eyes when they get it, whatever may be the fate of those jugglers who, having peopled the darkness with phantoms, naturally dread the exposure of their tricks by the irresistible revelations of dawn.

The following is the circular of the committee. We urgently appeal to all whom it addresses to coöperate in this work by forwarding as full and frank statements as possible. The failure of the committee's endeavor would be a great calamity; and it can succeed only through the hearty support of all:

"The Congressional Committee earnestly request the coöperation of the public in all sections of the country in obtaining information to aid in a practical solution of the important questions submitted to it. They especially invite suggestions from representative men in all departments of business. They propose the following questions to employers of labor throughout the country:

"1. What were the selling prices of your products in 1860, and in each subsequent year down to 1878, inclusive?

"2. What were the wages paid by you in each of these years for labor employed?

"3. Where the persons furnishing information are willing to do so, the committee invite them to state the percentage of profit made by them in each of these years upon the capital employed in their business.

"4. What were the wholesale and retail prices of the leading articles of family consumption during each of these years in your vicinity?

"5. What is the difference, if any, between the rents of tenements occupied by operatives in the years 1860 and 1878 in your vicinity?

"6. What was the comparative amount of the products of your business in quantity and value in the years 1860 and 1878?

"7. State the comparative steadiness of employment of operatives between the years 1860 and 1878, inclusive.

"The committee invite suggestions from employers and employed as to the extent and causes of the present depression of business, and as to any special Federal legislation which in their opinion would tend to relieve the same. The committee will hold their next session in the New York Post Office on Tuesday, August 20th, at 11 o'clock." *

MINING MYTHS.

A correspondent of the New York *Tribune*, writing recently from the West, refers to the *Silver Mountain Mining Company Fraud* and the *Seminole Gold and Silver Mining Company* as follows. We have already called attention a number of times to these operations, and we need hardly say we strongly indorse the advice given in the closing sentence of the following extract:

"At present the citizens of Rawlins are specially troubled in spirit about the best way in which to deal with offenders of another kind. For some months back, their city has been the headquarters of several gentlemen who have come here from the State of Maine with a determination to make money by hook or by crook, and who have been very successful. The *Carbon County News* characterizes the business of these industrious and energetic gentlemen as a method of making money without work, and stigmatizes their operations as the 'Silver Mountain Mining Company Fraud.' The system is to induce persons in the East to invest money in a company of that name, and to persuade them to pay assessments for the purpose of developing the mine, and then, when no more money is forthcoming, to leave them to console themselves for the loss of their dollars with the reflection that they have been duped. 'The Silver Mountain Lode' is said to be 'simply a little patch of ground that no man in this country would pay the recording fees for.' Another concern is called the 'Seminole Gold and Silver Mining Company.' This one contends that its business differs from that of the other in being perfectly legitimate, and that there is no connection between the two. But the *News* maintains the two are identical, and that all the gold and silver received by their representatives comes out of the pockets of confiding and credulous persons throughout the country, and is conveyed to Rawlins by the mail. I was informed that steps will soon be taken to bring the law to bear upon the doings of these gentlemen. So long as they continue their operations, it is impossible to persuade capitalists to come forward with money for the development of the mineral riches of this part of the territory. Perhaps it may be serviceable to your readers if I warn them against embarking their funds in either of the mines named above, before making inquiries on the spot and seeing the property with their own eyes."

THE LABOR QUESTION AT THE ANTHRACITE MINES.

For three years past, there has been a steady and increasing exodus of miners from the coal-mining regions of Pennsylvania toward the farming lands and metal mines of the Great West. This course was strongly urged by the Engineering and Mining Journal as that which would most effectually benefit the workmen, both those who went and those who remained at home. The depression in the anthracite trade this year, due in part to the mild winter of 1877–8, and in part to the higher prices ordered by the coal combination, and to the general stagnation of business, has carried this ebbing tide to the point where there is reason to fear this autumn an absolute scarcity of men at many of the anthracite mines. Even now it is in some places difficult to increase the present small output for want of laborers—there are still plenty of miners; and should the long-expected and ardently-hoped-for revival in business commence this season, it is more than probable the supply of coal may be limited by the scarcity of labor at the mines, and its price, as well as miners' wages, would increase. This is no imaginary danger, but one which, before three months are over, will probably assume unexpected proportions. Elsewhere we point out a preventive for some of the ill effects which such a state of things might cause.

NEW PUBLICATIONS.

The Aneroid Barometer, *Its Construction and Use. Compiled from several sources.* New York: D. Van Nostrand. 1878. 16mo, 106 pp.

This handy little volume, partly a reprint from *Van Nostrand's Magazine*, was prepared by Prof. Plympton, the accomplished editor of that periodical, and is issued as a part of the well-known "Science Series" of the publisher. It contains an explanation, with diagrams, of the construction of the aneroid, a discussion (from Buchan) of the diurnal and

annual variations of pressure and the general meteorological conditions of the barometer, a statement of the different hypsometric formulas, and (most important and useful of all) four tables. The first of these is AIRY'S table for estimating heights by the aneroid; the second, a logarithmic table for calculating altitudes from the barometric reading in inches, with due correction for temperature; the third, a table for the correction of the mercurial barometer, before comparing the aneroid with it; and the fourth, a table of latitude correction for heights of barometer. There are also compact and sensible rules for weather-prophecy, taken from Admiral FITZROY and other authorities, and a series of excellent suggestions to buyers of aneroids, from a paper by Gen. ELLIS before the American Society of Civil Engineers. The latter we can not forbear to quote:

"If you are not a good judge of the instrument, go to the best maker or seller.

"If you want accuracy, prefer a brass case. The back plate of the mechanism being secured to the case, if they are of different metals, as brass and silver, the different rate of expansion by heat sometimes causes error.

"Examine the dial and see if the divisions are *engraved*. If they are *stamped* upon it, the instrument is probably worthless for accurate observations. The dial should be electro-plated, and not washed. See that the index is fine and slender, and lies close to the dial. It is best of blued steel. Have no central pointer for showing the position of the index. There should be a small steel pointer attached to the rim, as has been described. See that the dial has the number of inches you desire. From six to ten inches is a good range for engineering purposes. About three quarters of the circumference can be made to read accurately.

"For a pocket aneroid, buy the largest that can be conveniently carried in the pocket, and not the very smallest size. Two to two and one fourth inches is a convenient size, and can be made accurate.

"If the dial has a scale of feet, see that it is graduated according to some correct formula, by taking off the numbers corresponding to each inch and comparing them with some known table or formula.

"The instrument should have a case, so that the heat of the hand shall not derange it while observing.

"It is better also to have a thermometer in the dial inside the scale, and dropped lower down, so as not to interfere with the index.

"Instruments that have the zero of the foot-scale at thirty inches, particularly those having movable scales, are generally erroneously graduated, the same scale being commenced at thirty that should be commenced at thirty-one inches; they are, moreover, inconvenient to use."

With regard to the last suggestion, we agree with Prof. PLYMPTON and other authorities that it is better not to use a foot-scale (except "for fun"), but to calculate altitudes from the barometric inch-record, by the aid of the proper formulas and tables.

The employment of the aneroid is extending very rapidly. Not only professional observers, but amateurs and tourists find it a pleasant and useful companion. The gentleman of the future will be more likely to carry a pocket-barometer than a "pocket-pistol." This practical little manual will be welcome, therefore, to an increasing public, and we are glad that it has been prepared by the skillful hands of Prof. PLYMPTON.

*

MUSTERCONSTRUCTIONEN *für Eisenbahn-Bau und Eisenbahn-Betrieb* (*Examples of Construction for Railway building and Railway-operating*). By EDMUND HEUSINGER VON WALDEGG, *Engineer in Hanover, and Editor of the Technical Organ of the Association of German Railway Administrations.* Hanover: *Helwing'sche Verlagsbuchhandlung*, 1878.

This work is to consist of a series of folio installments, appearing at irregular intervals (about 5 installments of 10 plates each or 10 of 5 plates, per annum), and sold separately. The magnificent plates are accompanied with a moderate amount of text, giving explanations, estimates of weight and cost, etc. Only constructions which are both new and approved will be included. The subject is divided as follows: I. Railway-Building, under which head foundations and culverts, road-bed and rails, switches and crossings, turn-tables, stations, tanks, workshops, signals, etc., are treated in separate series; II. Railway-Operating, under which the locomotives, rolling-stock, brakes, tickets, and other apparatus incidental to managing trains and shops are illustrated. To railway engineers desirous of informing themselves as to the latest European practice, this series will be welcome. The installments cost, in Hanover, from 2⅓ to 5 marks (62 cents to $1.25) each.

*

THE PRODUCTION OF ZINC IN BLAST-FURNACES.*

By A. Lencauches.

The tension of the vapor of zinc, even at a high white heat, does not appear to be much in excess of the pressure of the atmosphere; and it is thus probable that if a blast-furnace, for zinc, were worked in a chamber containing air at a pressure of 3 or 4 atmospheres, the metal, instead of passing off as vapor, would flow from the hearth like cast-iron, lead, or copper. The cost, however, of such a furnace, and the difficulty of working it, put it beyond reach, and, for the present, if zinc ores are to be worked in blast-furnaces at all, the metal must pass off as vapor, and be condensed from the gas.

When a current of carbonic oxide is passed through a porcelain tube filled with oxide of zinc, and then heated to whiteness, the following reaction takes place:

$$ZnO + CO = Zn + CO_2,$$

the zinc being reduced, and carbonic acid formed. As the zinc vapor, however, passes along in the current of gases to a cooler part of the tube, its affinity for oxygen reasserts itself, and the converse reaction ensues:

$$Zn + CO_2 = ZnO + CO,$$

the only result of the operation having been to drive the oxide from the hotter to the cooler portion of the tube.

Oxide of zinc is also readily reduced, at a white heat, by blast-furnace gas, containing 24 per cent, by volume, of CO and 12 of CO_2. The gas, after the reaction, contains equal volumes of CO and CO_2. But as the zinc vapor is carried along by the current, when the temperature of this falls below a clear cherry-red heat (about 1200° C. or 2190° Fahr.), the reducing action of the CO ceases, and the CO_2 in the gas energetically attacks the metal, transforming it again to oxide. Thus, in this case also, there is no practical reduction of the oxide, but only its displacement to the cooler part of the apparatus.

The reactions, on heating sulphide of zinc in a retort, in admixture with carbon, are precisely similar. The vapors of zinc and of sulphide of carbon pass off together to the condenser; but as soon as their temperature falls to below 500° C. (932° Fahr.) the sulphide of zinc is reproduced, and the carbon deposited in the form of lamp-black. In the presence of air the products would be oxide of zinc, sulphurous acid, and carbonic acid. Ores containing intimately intermixed blende and galena might thus be advantageously treated. in some cases, in order to separate the metals, by smelting them directly in a cupola. The fused sulphide of lead would be tapped from the hearth, and the oxide of zinc might be collected, from the gas, in suitably arranged depositing chambers and washers.

In order to determine how small a proportion of CO_2, in the gases of a blast-furnace, would oxidize zinc vapor, the following experiment was tried: A vertical retort, 8 inches in diameter and 11·8 feet high, was heated to whiteness, through a height of 10 feet, and filled with red-hot charcoal. Air at a temperature of 400° C. (752° Fahr.) was blown into this through a ½-inch pipe. After having traversed the whole height of the retort, in contact with the charcoal and at an average temperature of 1600° C. (2912° Fahr.), the escaping gas still contained 0·5 per cent, by volume, of CO_2. The gas was passed, from the retort, through a porcelain tube, also heated to whiteness, and containing zinc in ebullition, and thence through a condenser. The greater part of the zinc was deposited in the condenser, but a portion of it was in the form of what is termed zinc fume (*zinc gris*), a fine gray powder, consisting of extremely minute particles of metallic zinc, powdered over and kept from uniting by about 5 per cent of oxide; and the escaping gas did not contain a trace of carbonic acid. A very small proportion of carbonic acid, mixed with two hundred times its volume of neutral and reducing gases, is thus sufficient to oxidize zinc vapor at certain temperatures.

It is evident from this, that zinc reduced in a blast-furnace (the gases of which contain on the average one volume of CO_2 to two of CO) can be obtained only in the form of fume, and that even this will be further oxidized, unless the gases are cooled very rapidly, from above the temperature at which oxidation begins (about 1200° C.), down to 300° C. or 400° C., below which it ceases to be troublesome.

To cool the gases with the needful rapidity, they might be passed through a tubular condenser, like the barrel of a locomotive boiler, with tubes about 11 feet long. If the velocity through this were 33 feet (10 meters) per second, the gases would pass through it in one third of a second, and scarcely more than 5 to 7 per cent of the zinc would be oxidized. The pulverulent zinc fume would be deposited in the condenser, which would have to be changed every ten to fifteen minutes. The change might be effected in three or four seconds, and the fume might be brushed out from the condenser that had been in use, into a sheet-iron truck, and taken to the melting shop. The gas from the condenser should be passed through depositing chambers, and might then be burned under the boilers.

To test how far this mode of working is practicable, the author constructed a small cupola 5 feet high by 18 inches in internal diameter, and fitted it with a condenser, formed of a single tube 8·2 feet long and 1·6 inches in diameter, kept cool by water. The cupola was charged with charcoal, mixed with calamine such as is ordinarily treated in zinc-works, and on distilling off the zinc, 90 per cent of the amount contained in the ore was found in the condenser. The zinc was almost entirely in the form of fume, containing 90 to 95 per cent of the metal, a few particles only being as large as grains of corn.

Fume of this kind is produced, in greater or less quantity in every mode of distilling zinc. It is scarcely as heavy as water, volatilizes when heated in a close vessel, without becoming liquid, burns rapidly when set fire to, and decomposes water at ordinary temperatures. Submitted to compression, by a screw or hydraulic press, it acquires all the appearance of cast-zinc, and its density is increased to 5 or 6, that of the cast-metal being 7; but the compressed blocks are very fragile and wanting in tenacity, and they oxidize slowly when kept exposed to the air. A block 2·75 inches in diameter by 7·9 inches in height becomes oxidized to the center in the course of six months.

Such compressed blocks of fume possess the valuable property that the metallic zinc contained in them melts and flows out when they are heated, without dissolving the intermixed foreign matters. The block shrinks in volume as the metal flows from it, and the foreign substances, oxide of lead, oxide of iron, ashes from the fuel, etc., are left behind as a sort of skeleton; that from a block 2·75 inches in diameter being often not larger than a pencil. The metal so obtained by liquation from the compressed blocks of fume is thus as pure as that ordinarily produced by a second distillation, and much superior to that made, from the same fume, by the Montefiore process, in which, by the pressure and agitation to which the metal is subjected, during the fusion, these impurities are in great part incorporated with it. The fume produced, in all methods of distillation, may be advantageously treated in this way.

In conclusion, the plan of working zinc ores in a blast-furnace is likely to be profitable only in case ores should become anywhere procurable at a low price (8s. to 12s. per ton), yielding 6 to 10 per cent of zinc, and 25 to 30 per cent of iron.

The ordinary prices of rich zinc ores, at the present time, render such a mode of working them quite impracticable. W. H.

* Abstract of a paper in the *Mémoires de la Société des Ingénieurs Civils*, 1877, pp. 568-80. From the Proceedings of the Institution of Civil Engineers of London, edited by James Forrest, Secretary.

PRATT COAL AND COKE COMPANY.—This company is preparing to build a rail road six miles long from its coal mines in Jefferson County, Ala., east to Birmingham, where it will connect with the South and North Alabama and the Alabama Great Southern roads. The company owns 5000 acres underlaid by an excellent quality of coal.

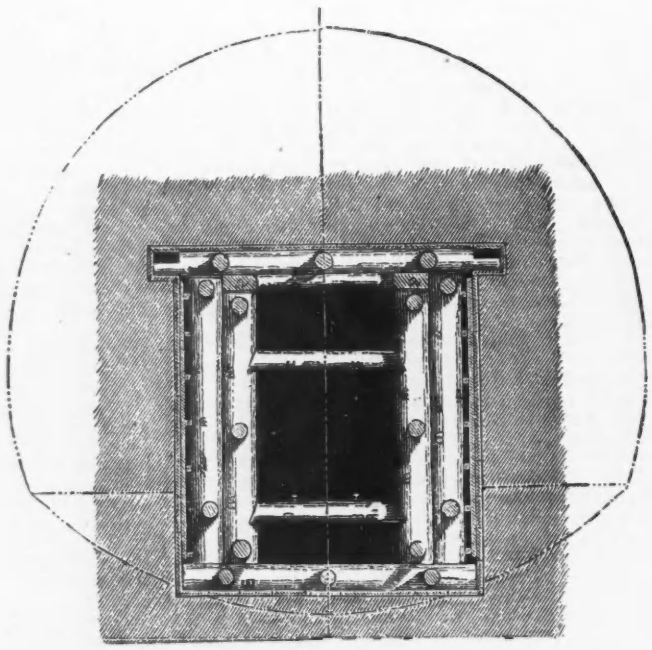

Fig. 1.

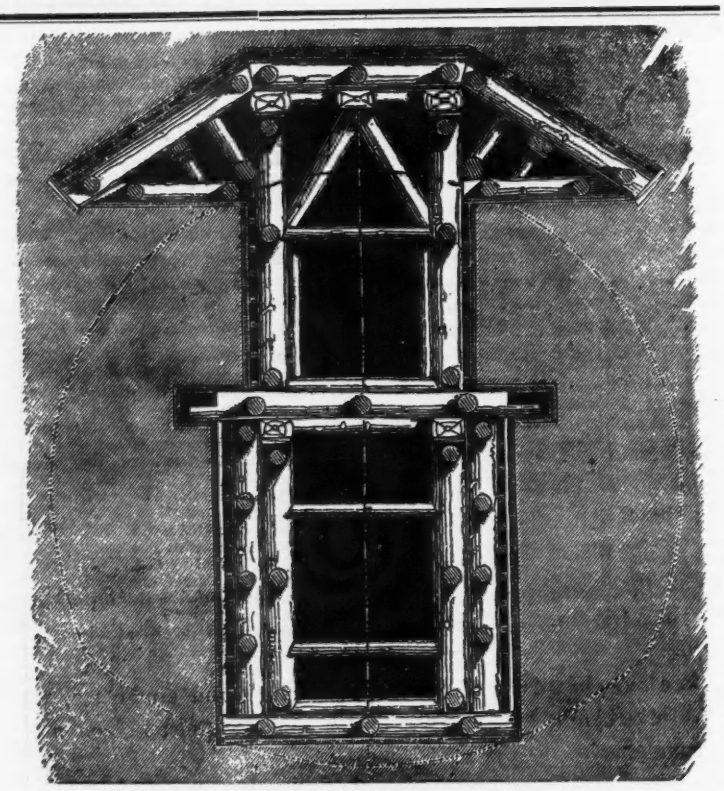

Fig. 3.

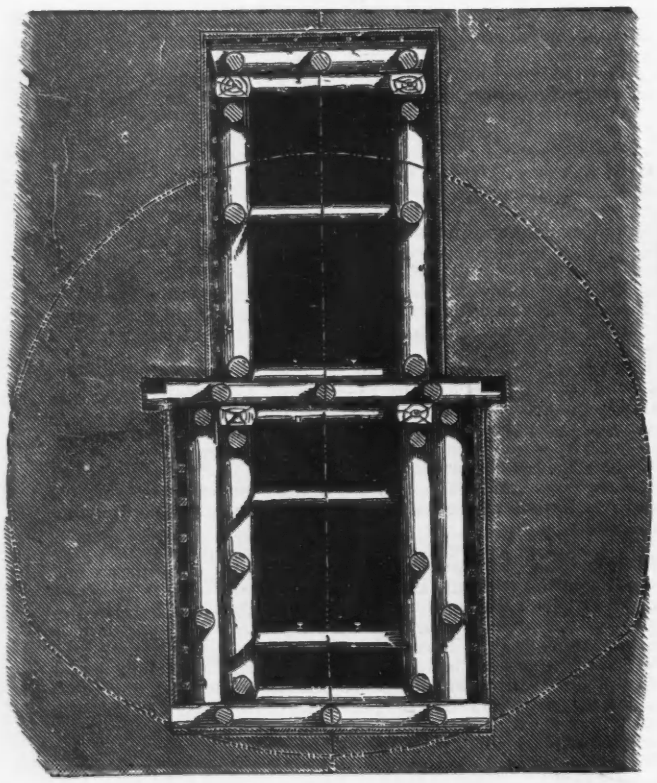

Fig. 2.

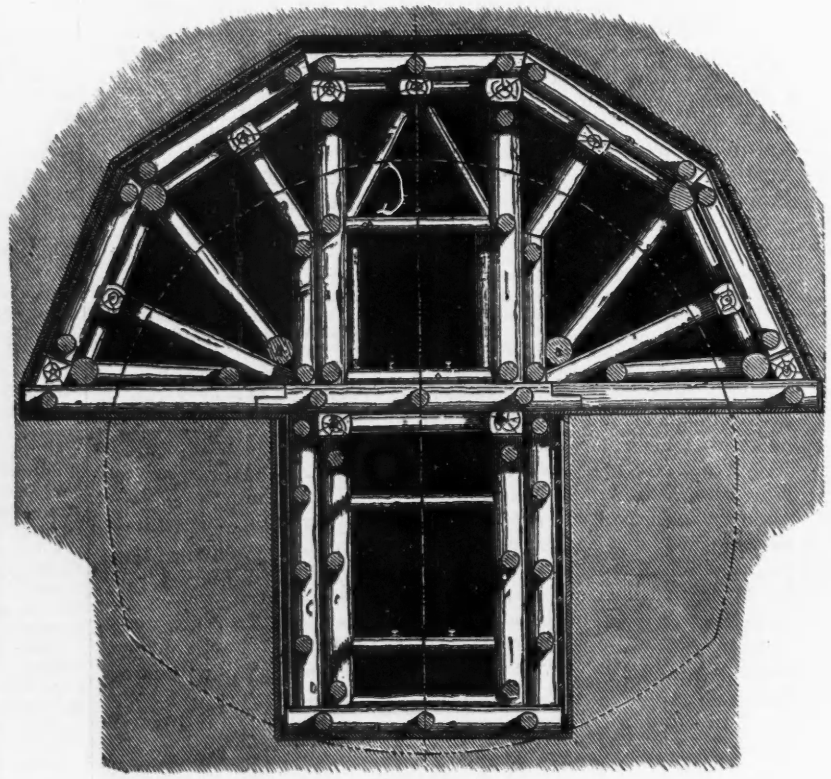

Fig. 4.

The Improved Austrian System of Tunnel Timbering and Arching.

(For description see page 113.)

THE VALUE OF STRONG MACHINERY.

By P. Barnes, C.E.

The world has rarely seen a time when, more than at the present, the value of substantial and correctly designed machinery has been appreciated by those who have had it to run. There can be little doubt that metallurgists generally have noted this more than any others, inasmuch as the materials they have to deal with are almost proverbially refractory, and, at all events, such as in years past have persistently tried the soul of the machinery, whether or not they have that of the manager.

If, as in ancient phrase, the life of an animal was in its blood, so in a manufacturer's sense the life, or at least the worth, of a machine lies in its real rugged strength, and upon this, in a large majority of cases, the reliance of all concerned for profit is placed rather than upon any mere excellence of finish. The certainty of freedom from repairs, even while turning out a maximum of product, is a reasonable and almost infallible test of the character of the design and the excellence of the workmanship of any metal or mineral-working machine. We are led to this thought by seeing, in various ways, indications that closer attention is likely to be given to the subject of coal-washing, in which higher hopes have been raised and greater disappointments felt than in almost any other similar thing. The worst of it is, too, that their failures have altogether too often arisen from the entire insufficiency of the machinery and other fixtures to withstand the wear and tear necessarily brought upon them. To wash coal, in the abstract, is as easy as to prove the greater value of the product when washed; but to wash it year in and year out, and to make things all over the establishment howl with the energy of persistent and successful operation is quite another thing. It is, however, just what our coal washers need to do for a profit, even if to do it they have to abandon old apparatus and build anew from the foundation. Let us see some coal-washing machinery after the John Fritz rolling-mill type for strength and endurance, and then we shall see money in it, and even more in dull times than in good.

TUNNEL TIMBERING AND ARCHING.*

(*Continued from page* 94.)

FINAL DEVELOPMENT OF THE AUSTRIAN SYSTEM.

Though these changes were tried by some, there were other engineers who held on to the principles of the Austrian system proper, and they came to the conclusion that much of the trouble had resulted directly from: 1. Opening out too long sections at a time; this had been done either from lack of cautionary experience, or from a desire to decrease the cost of masonry by building large amounts at a time. These long sections, by undermining a large space at once, had, of course, tended to create heavy areas of pressure. The change, therefore, was made to shorter sections in bad ground with good effect. This simple and natural expedient, however, did not fully solve the problem. 2. It was further found best, in very wet material, *to drive first a bottom-heading in all cases.* (This is a most important rule, and it is one of universal application in soft ground.) This had not been always done before, and its good effect was found to be great in drying out the material before sectioning was begun. 3. The double set of upper and lower center props was finally decided to be a better arrangement than the high long props extending from top to bottom of heading, which, it will be remembered, was the original plan used from enlarging the top-heading downward, and which some had tried to revive. Such high headings also necessitated the use of excessively long props, which, though undoubtedly stiffer than two props with a sill between, were nevertheless too heavy and unwieldy, and, moreover, the high headings were found very difficult to work in quicksand. 4. The rakers *m*, already alluded to in Fig. 2 in JOURNAL of August 10th, were also decided on as of much benefit in very soft material for steadying the timbering when a movement began.

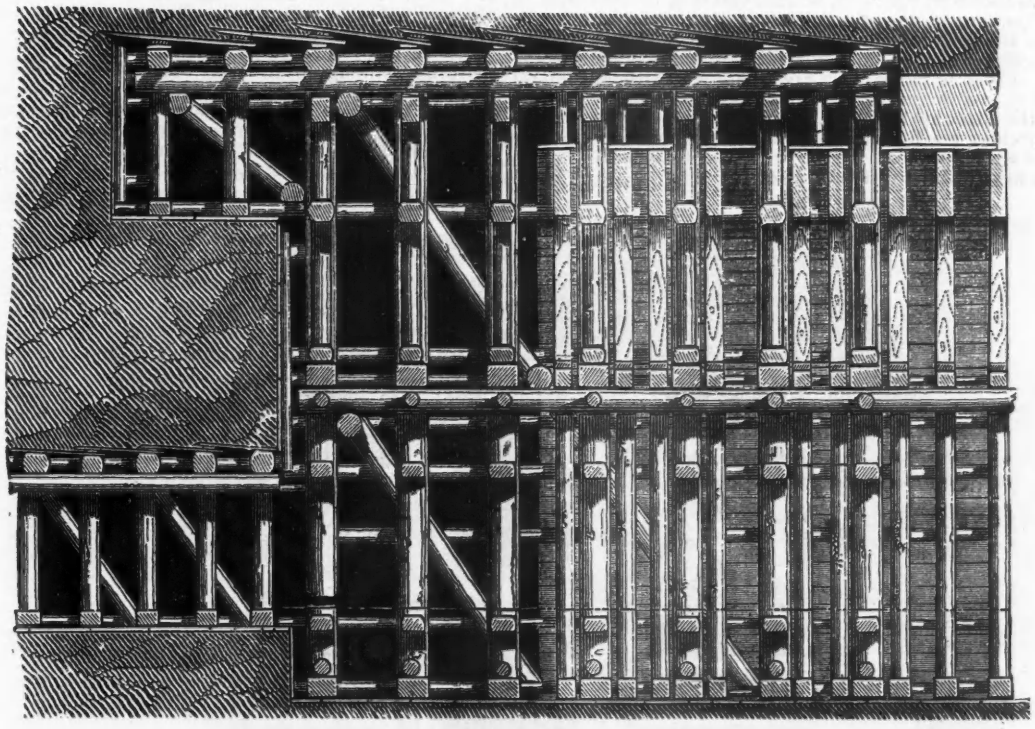

FIG. 5.

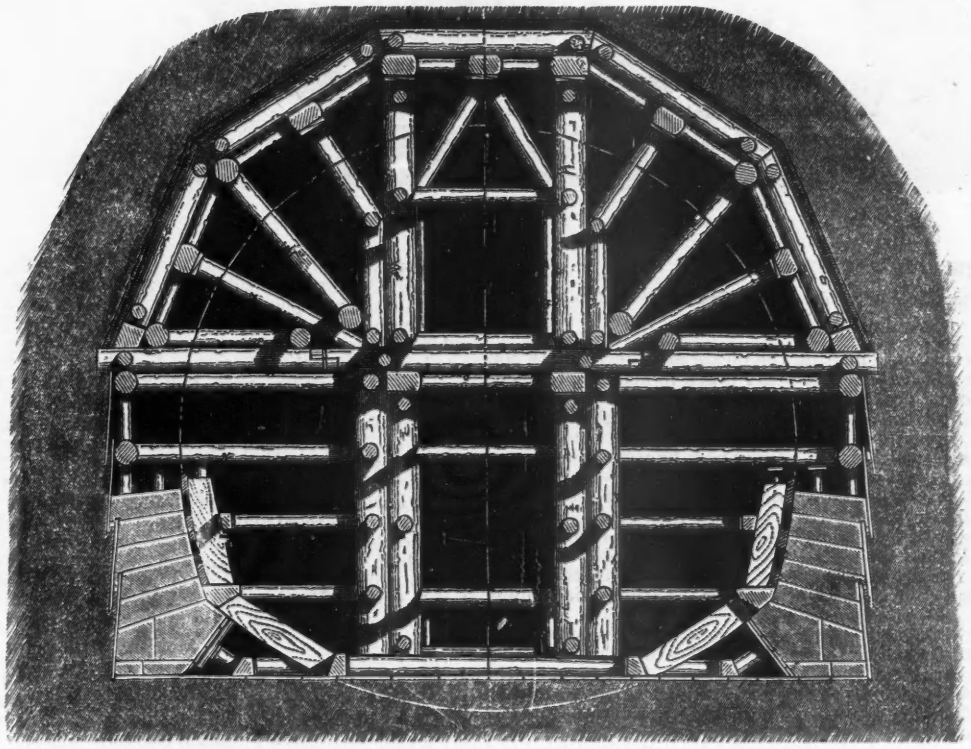

FIG. 6.

Looking into the matter, the later Austrian engineers, and notably Mr. RZIHA, have advocated the "Firstenbau" or bottom breaking-in system. As thus applied, the bottom-heading is, first of all, driven throughout the tunnel (as noted above), serving at once as an adit for the water, giving also free ventilation, and establishing the alignment of the tunnel definitely. Then this can be enlarged to a higher and wider heading, the bottom timber of which ultimately acts as the bottom sill of the tunnel-timbering; its cap is the subsequent middle sill, and its side-props are the legs of the subsequent lower center frame. To strengthen this frame (Fig. 1), the horizontal longitudinal bars *a a* are placed beneath the cap.

This bottom-heading being completed, as a rule the ground above has

* Condensed from *A Treatise on Tunneling, Explosive Compounds, and Rock Drills.* By Henry S. Drinker, Mining and Civil Engineer. Published by John Wiley & Sons, New York. (Copy-righted.)

been so well drained as to offer no very serious difficulties in excavation. Fig. 2 shows the top-heading constructed, and the advantage of this method of procedure evidently lies in the building from below upward. The lower set acts as a foundation for all the subsequent work, and remains undisturbed in its position as it was first placed. Moreover, this high heading again serves to further drain out the sides before the enlarging is begun.

This latter is commenced (Fig. 3) on the right and left at the top, and thence continued as shown in Fig. 4. The excavation of the side-walls is then begun, and Figs. 5 and 6 show the full excavation taken out.

This timbering of the full area of tunnel having been finished in sections of six, nine, or eighteen feet, according as the ground may permit, the masonry is begun, as seen in Fig. 6; and Fig. 7 shows it further advanced and the centers set. As the arch goes up, the props to the roof-timbers are removed, and the latter are stayed by temporary props resting on the centers, until the arching reaches them and they can safely be removed. Where the material is not too loose, the lagging also is taken out.

After the arch is keyed, the invert is turned.

(TO BE CONTINUED.)

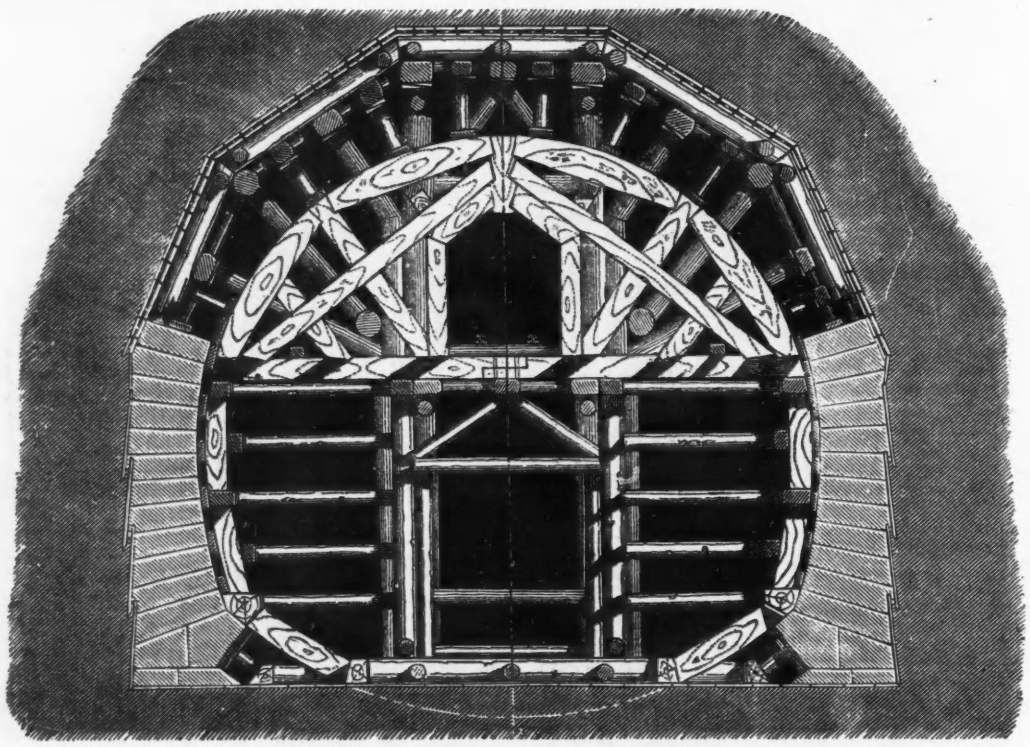

Fig. 7.

THE METALLURGY OF NICKEL.

By M. Badoureau, in Annales des Mines, Translated in Iron.

(*Continued from page* 96.)

The second process consists in melting the nickel ore directly with copper, or oxide of copper and carbon, care being taken to keep the temperature down so as not to reduce too much oxide of iron. A cast metal is obtained, consisting of nickel and copper, which is granulated and remelted with oxide of copper, or oxide of nickel, to bring it to the percentage required. The cast-nickel and copper may be refined in a reverberatory furnace by cementation.

Mason and Parkes' Process.—The operations just described are then carried out by Messrs. Mason and Parkes. They melt on the hearth of a reverberatory furnace oxidized nickel ore, together with oxidized copper ore and the suitable fluxes, obtaining thus an alloy of nickel, copper, and iron, which they remelt with oxide of copper, in order to run the iron into the slag. Lead chloride may be used for the elimination, under the form of a chloride, of the last traces of iron.

Sebillot's Process.—M. Sebillot's processes are only a reproduction of the dry processes of M. Garnier, to the details of which they add only the two new ideas following: M. Sebillot uses, in the blast-furnace, the oxidizing action of the wind of the tuyere to oxidize the iron, and he refines the melted nickel in a fixed crucible, fitted with a tap-hole and heated in a glass furnace.

REDUCTION OF NICKEL SILICATE WITH SULPHUR OR ARSENIC.

Sulphur and arsenic may be made use of in several different states for extracting nickel from its natural silicate.

(1) Raw native sulphur, on condition of getting it up.

(2) Sulphate of barytes or sulphate of lime, reduced in a reverberatory furnace to the condition of sulphides.

(3) Alkaline or earthy sulphides or persulphides.

(4) Soda cake, a waste product which may be had at a low price.

(5) Iron pyrites, except for the fact that its use is followed by the presence of too much iron in the mattes or speiss.

(6) Coppery pyrites or gray copper free from antimony, so as to get a cupronickeliferous matte or speiss for treatment on the method now carried out at Hamburg (see *ante*) for a cast alloy of nickel and copper.

(7) New Caledonian ores of nickel may be added to European ores. The excess of sulphur or arsenic contained in the New Caledonian ores would reduce the nickel silicate: while, on the other hand, the silicate of magnesia, which constitutes the greater part of their gangue, would make an excellent flux for the European ores. Since I was at Schladming, an experiment in this direction has been made by M. Flechner.

Hessel's Process.—Hessel melts nickel silicate with soda waste, or alkaline persulphides. He gets a nickel matte more or less exempt from iron, an excess of alkaline sulphides which can be made use of over again, and a slag which principally carries off the magnesia and the oxide of iron. The matte is roasted at the reverberatory furnace with the addition of quartz, yielding a concentrated matte and nickeliferous slag, which is replaced with the raw metal. The concentrated matte is treated by the processes customary in both the wet and dry way, or else it is roasted as much as possible for sulphate, and rock-salt is added at the end of the roasting. Taking up the stuff with water, we get a solution composed principally of nickel chloride. In the insoluble residue the unroasted parts of matte are taken out and roasted over again. Parts containing nickel oxide more or less mixed with oxide of iron are also taken out and sent back to the raw metal together with the ore.

PROCESS OF TREATMENT THE MIXED WAY.

Christofle's First Process.—Rightly deeming that the capital difficulty in the treatment of New Caledonian ores the dry way, is the presence of iron, M. Christofle endeavors to separate the iron by a previous treatment on the wet plan. Samples which do not contain any visible oxide of iron are picked out, and the rest of the ore is subjected to a washing which carries away ferruginous mud very poor in nickel. The washed ore is put under the stamps and undergoes a second washing, which results in ferruginous mud still very poor in nickel. After this second washing, the ore is pulverized and treated with hydrochloric acid, the iron dissolves before the nickel, so that we get on the one hand a purified nickel ore, and on the other hydrochloric liquors, in which are dissolved both the ferruginous muds referred to above. The processes by the wet way used for extracting their nickel from them we will detail further on.

The enriched ore is added to the rich ore separated by picking, mixed with wood charcoal and carbonate of soda and lime, and reduced either in crucibles or on the sole of a reverberatory furnace. Cast-nickel is thus got which is refined by melting with niter. To manufacture alloys of nickel and copper, cast-nickel may be made and melted with copper; but in this case it is better to take nickel ore freed from iron oxide, and add to it oxide of copper and appropriate fluxes, and reduce it with charcoal.

Christofle's Second Process.—Hydrochloric acid may be replaced by oxalic acid, or any other organic acid. Oxalic acid is prepared by heating organic matter together with oxidizing reagents, and it has the advantage of being able to be regenerated. The pulverized ore is treated for several hours at a boiling temperature with a concentrated solution of oxalic acid which dissolves no trace of nickel. The liquor is decanted and the residue washed, the waters are then treated with milk of lime so as to get a precipitate of oxalate of lime, which is treated in turn with sulphuric acid. By this process the oxalic acid is regenerated while only sulphuric acid has been consumed. The ore, freed from its iron, is melted with coal and fluxes calculated in such a way as to give the slag the following composition:

SiO_2	68
CaO	15
NaO	12
MgO	3
FeO	2
	100

The slag is pulverized and the grains containing nickel are separated with a magnetized bar, the remainder being remelted for bottle glass.

Mason and Parkes' Process.—Mason and Parkes, wishing to melt

nickel with "corocon," in order to get an alloy of nickel and copper, proceed as follows to get rid of a part of the iron from the nickel ore. This process consists in melting the ore with rock-salt at a low temperature, in order to get a semi-fluid mass which is pulverized and taken up with water.

PROCESS OF TREATMENT THE WET WAY.

Christofle's First Process.—The pulverized ore is attacked by hydrochloric acid in earthenware vessels, containing each 100 liters, and heated in a bain-marie with water vapor. By means of a contrivance which is kept secret, the operation is so conducted as not to dissolve the magnesia completely, and thus to economize a certain quantity of acid. To oxidize the iron a little nitric acid is added, or preferably a little chloride of lime is added to the decanted liquor. In presence of an excess of hydrochloric acid the chloride of lime does not precipitate the nickel. Brought to a richness of 20 per cent in nickel, the liquor is heated in an enameled cast-iron basin, or, still better, in an earthenware vessel, 50 or 60 grams of oxalic acid being added per liter. The nickel is precipitated alone on boiling in the condition of an oxalate, and when the color has been taken out of the liquor, it is decanted. The precipitate is washed, dried, and calcined in a brasqued crucible with lime; it is decomposed into carbonic acid and nickel.

Christofle's Second Process.—The ore is dissolved as in the first process, and the solution is brought into large wooden vats, in which the oxide of iron and the alumina are precipitated with powdered chalk. The ferruginous slimes contain nickel and ought not to be thrown away. Chloride of barium added to the liquor precipitates the trifling quantity of sulphuric acid which is found in commercial muriatic acid. The liquor is afterward treated with chloride of lime, which precipitates the nickel in the state of a black sesquioxide. The precipitation is never complete, because the excess of chlorine redissolves the nickel oxide in part. At the end of the operation a little water of lime must be added to complete the precipitate. This precipitate is washed, dried, washed with boiling water, washed with water acidulated with hydrochloric acid, dried, and reduced with coal in a brasqued crucible.

Christofle's Third Process.—The ore is dissolved, and the oxide of iron and alumina precipitated as in the second process. The liquor is then decanted, and if it does not contain any magnesia, a little chloride of magnesium is added. The liquor is afterward treated with a quantity of lime-water, calculated so as to precipitate all the nickel oxide and a little magnesia, since it is impossible to completely precipitate the nickel oxide without its carrying away magnesia. The precipitate, washed with hot water and then dried, is mixed with charcoal, and calcined, in the form of cubes, at a very high temperature, so as to get one or several drops of nickel, surrounded by a sulphurous and magnesian slag. So far from being harmful, the magnesia has thus served to carry off the sulphur, and has dispensed with the use of barium chloride. The drops of nickel are beaten with a pile, screened and washed. The pulverized slag is submitted to the action of the magnetic picker, so as to avoid any loss of particles of metal; the particles thus got back are put with the reduced nickel cubes, but not melted, and these matters are melted with carbonate of soda and carbonate of lime. A cast nickel is thus got, which flattens under the hammer, and is cast in a granulating vat. To make pure nickel, these granules must be remelted, adding metallic oxides to them before they are run, in order to decarburize them. For this purpose may be used either nickel or zinc oxide. They have the advantage of not introducing any new metal, on account, so far as the zinc goes, of its volatility. For the manufacture of alloys, the drops of impure nickel are melted with copper and zinc; the carbon is eliminated during the melting. It is better, however, in this case, not to trouble about the intermediate drops of nickel, but to mix the precipitate of nickel protoxide with copper scale, or oxidized copper ore, and reduce the mixture with some form of carbon.

Rousseau's first process is as follows: The ore is subjected to the action of hydrochloric acid, and the liquor is decanted into wooden vats lined with lead. After washing, the residue of powdery silica can be used in the manufacture of soluble glass. The iron is peroxidized with chloride of lime. This operation can be carried out before the separation of the silica. The oxide of iron is precipitated with carbonate of lime or carbonate of baryta, and the liquor decanted. The protoxide of nickel is afterward precipitated with a milk of magnesia employed in a calculated proportion. If carbonate of baryta is used, the mother-waters may be taken into use for the preparation of barytic salts. A liquor of magnesium or calcium chlorides being obtained, it is evaporated to dryness, and the residue treated with a jet of superheated steam—the hydrochloric acid and the magnesia are thus regenerated. The hydrochloric acid is re-collected, and the magnesia residue is washed in plenty of water.

Rousseau's Second Process.—The ore is put under the action of hydrochloric acid as in the first process, but without chloride of lime. The decanted liquor is treated boiling, with an excess of carbonate of lime or carbonate of magnesia, the iron being precipitated alone. The liquor is decanted, and the protoxide of nickel precipitated with a milk of magnesia. The liquor is evaporated to dryness, and the residue treated with superheated water vapor, the result being the winning of hydrochloric acid and of large quantities of magnesia. If too much magnesia is got, it may be worked up for firebricks, which it makes of a superior quality.

Kamienski's Process.—The ore is attacked with hydrochloric acid diluted with twice its weight of water. The iron is peroxidized with a current of chlorine, and it is precipitated with magnesia carbonate. The liquor is decanted and treated hot with carbonate of soda. The result is an almost complete carbonate of nickel, containing scarcely any carbonate of magnesia. This precipitate, washed, dried, and calcined in a crucible with carbon, gives spongy nickel. The liquor is afterward treated cold with carbonate of soda. There results a precipitate of magnesia carbonate which takes up the nickel which remained in the liquor; this is the precipitate which gives the magnesia carbonate, the use of which we have already pointed out; the liquor contains at this moment sodium and magnesium chlorides. The first is thrown down by a light evaporation, the remainder being heated in a crucible to 150° Centigrade, with a jet of water vapor to regenerate the hydrochloric acid.

Araud's Process.—The pulverized ore is screened above a wooden receptacle which contains hydrochloric acid, so as to get a liquid paste, which is placed in rectangular earthenware vats, lined with paper. For 29 kilograms of nickel or iron, 100 kilograms of acid are used. The earthenware basins are placed in a fire-brick retort heated like a gas retort; the chlorides distill and are condensed. They are exposed to air and dissolved in water, the iron being precipitated with carbonate of lime, and the nickel with milk of lime. The protoxide of nickel is calcined with carbon in crucibles or vertical retorts made of fire-brick or plombagine.

Sebillot's First Process.—The ore is attacked with snlphuric acid and sulphate of ammonia, which is got back with water. Crystallizing to a certain degree of concentration all the sulphate of nickel and a part of the sulphate of magnesia is got in the shape of crystals. The crystals are calcined at 100° Centrigrade, and yield an anhydrous product of fixed composition of a straw-yellow color. The crystals may also be re-dissolved and the nickel precipitated.

Sebillot's Second Process.—The ore is heated in the reveberatory furnace with sulphuric acid, so as to have a compact mass of dried sulphates. After dissolving in water, the iron is precipitated with chloride and carbonate of lime, and the magnesia with phosphate of soda. The sulphate of nickel is afterward crystallized, or the protoxide of nickel is precipitated with lime-water. In this last process the sulphuric acid may be replaced by hydrochloric acid.

PROCESSES OF ANALYZING AND TESTING NICKELIFEROUS AND COBALTIFEROUS MATTERS.

Analysis by the Wet Way—The Varallo Method.—Take 2 grams of ore or matte, pulverize and attack with *aqua regalis*. Precipitate the copper with hydro-sulphuric acid, and evaporate to dryness. The remainder is re-dissolved in a few drops of nitric acid, and precipitated with chloride of lime. Re-dissolve the whole in acetic acid and boil; the iron is precipitated. Filter, add a little sulphuric acid, and precipitate the nickel and cobalt together in a metallic state with a Bunsen pile. The two metals are not separated. This analysis lasts five days.

The Scopello Method.—Take 2 grams of matte, dissolve in hydro chloric acid to which a little nitric acid is added at the last. Precipitate the copper with sulphureted hydrogen, filter, and wash. Roast the precipitate of Cu_2S in a platinum capsule, and re-dissolve in nitric acid. Filter and precipitate the oxide of copper with boiling potash. Boil, with a few drops of nitric acid, the liquid containing nickel, cobalt, and iron Cool, and neutralize the liquor with ammonia, dilute with plenty of water add acetate of soda or ammonia, and boil the liquor. A precipitate is thrown down which contains all the iron and a part of the nickel. Filter and precipitate the nickel and cobalt from the clear liquor with potash Wash with hot water, calcine, and wash again with hot water. Weigh the two oxides together. If greater exactitude is required, reduce with hydrogen.

(TO BE CONTINUED.)

SAN JUAN (COLO.) SILVER MINES.

Special Correspondence of the Engineering and Mining Journal.

A RICH STRIKE IN THE IMOGENE DISTRICT.

My partner and I being just now in the throes of assessment work on four of our claims, and "gypsying," or living in a "bough-house," at the upper end of our basin, you may imagine my energies and facilities for writing are somewhat small; but as an important and rich strike has this day been made close to where we are at work, I send you a hurried description by a miner who goes down to Ouray to-morrow. Imogene Basin is about seven miles from Ouray, its elevation being, at the lower end, 9500 feet, and at the upper, at the base of the mountains which inclose it, 11,000 feet above tide-water. It is divided by a ridge of mountains from the Sneffles and Virginius Basins, in which are what have hitherto been the richest and most celebrated mines of the Sneffles district, but which seem destined ere long to pale into insignificance alongside those of their sister basin, Imogene.

This latter has been so far neglected, fortunately for us, by the summer hordes of prospectors, for the reason that, though known to contain large, well-defined, and outcropping lodes having galena as the base of their minerals, they were so low grade *on top* as to be not worth "staking," much less having work done on them.

During the past year, however, some few miners, acting on a theory derived from the study of the record of such few galena veins as have been worked in the San Juan country, and which have invariably become rapidly more highly argentiferous as depth was gained, have taken up claims on the lodes in this basin, and though as yet but little depth has been gained, the result of the work done has, by careful and repeated assays made by me during the winter, fully supported the correctness of the theory.

I take it, therefore, that as there are hundreds of these galena veins in this country whose outcroppings will not give an assay of over ten to twenty ounces Ag to the ton, and which are, therefore, neglected, it is of the utmost importance to us that the matter should be well ventilated.

The *Ute* mine, at Lake City, owned by Messrs. CROOKE Bros., the smelters, was first located in 1873, before the country was ceded by the Indians, and the owners had to get permission from the soldiers to go in and work their assessment. When CROOKE Bros. bought the mine, in 1876, for $125,000, there was a sixty-foot shaft on it, and the ore that came out of that shaft was sold for $8 per ton, and milled about 20 ounces Ag. Now, I am credibly informed, the ore mills between three and four hundred ounces, a depth of 1000 feet having been gained. The crevice is about 8 feet wide, and, when my partner visited it a year ago, had three feet of solid galena.

The *Mountain Queen*, at Mineral City, is another instance. The first 500 tons taken from this mine were sold to Mr. BARNARD, the smelter, at Lake City, and ran 29 ounces Ag. It is now said to have been an 18-inch streak, which runs 200 ounces—brittle silver principally. The entire width of mineral streak, when I saw it last year, was eight feet *solid galena*, and when I say "solid," I mean without any gangue in it.

The *Pride of the West*, in Cunningham Gulch, near Silverton, which lately sold for $125,000, was staked and not worked for two or three years, because the ore on the surface assayed only 8 to 10 ounces. When I saw it last year, they had cut it at 100 feet with a cross-cut tunnel, and they had six feet of galena, which averaged 40 ounces Ag; at that time, how-

ever, they had ore which, when sorted, must have milled at least 200 ounces, as the owners paid $90 per ton to have it packed to CROOKE'S works at Lake City, *via* Burrows Park, a distance of 45 miles.

There are many other similar instances, but the above are three celebrated mines in this country, and having taken particular pains to obtain their record from reliable sources, I believe the foregoing to be entirely correct.

A NEW THEORY FOR RICHNESS INCREASING WITH DEPTH.

Your readers are probably most of them conversant with the Pattinson process for the desilveration of lead or the separation of a more highly from a less highly argentiferous lead, founded on the fact that, if an argentiferous lead be melted and then cooled slowly and uniformly, there rises to the surface a mass of crystals which may be removed by skimming, leaving the more fusible metal in the vessel. The skimmings are found to be much impoverished in silver, while that left in the vessel is correspondingly enriched, and by a repetition of this process the silver is concentrated in a small proportion of lead which is then cupelled for the final separation of the silver. (See *Greenwood's Metallurgy*, page 145.) Are not our galena lodes formed by fusion and crystallization? and may not a portion of the above process have occurred in nature, thus accounting for the low-grade character of our galena ores on the surface and their increased richness with depth? This is purely an original idea of my own, and probably a very erroneous one, and perhaps some one of your readers who is versed in the formation of lodes will give us some information on the subject.

Another, and it seems to me absurdly unfounded, objection to the ores of this basin is, that they all contain about 5 per cent of zinc-blende—unfounded for this reason, that in my assays I have found the blende to carry as high as 43 ounces of silver to the ton, and in all the richest specimens of ore taken from the Hoosier Girl, Millionaire, Hidden Treasure, and Pocahontas (assaying from one to three thousand ounces) the silver fahlerz, or gray copper, has been intimately mixed among the zinc-blende. The English miner's maxim is "Jack rode a good horse," and he likes to see Black-jack in a lode. It is well known that silver has a superior affinity for zinc than lead, and that if argentiferous lead and metallic zinc be melted together, on cooling the zinc will separate from the lead and abstract from it nearly all the silver, forming a highly argentiferous crust of zinc; on this principle is based the Parkes process for the desilveration of lead.

The length of Imogene Basin is about two miles, its width about one mile as the crow flies, the average altitude of the ridge or horse-shoe of mountains which inclose it about 12,300 above tide-water, while some of the peaks are 13,000 and over. Up to 11,500 feet its sides are clothed with a magnificent growth of heavy pine timber; Imogene Creek, a never-failing stream, flowing down its center, fed by numberless rivulets from the mountain sides.

The basin is crossed by seven well-defined veins, all trending about N. W. to S. E., there being, as far as we know, no cross-veins. They occur at almost regular intervals of about 1000 feet, and nearly all outcrop in different places in the basin, and may be seen where they cut through the summit of the mountains on either side. These veins have quartz for the matrix of the metals and a porphyry gangue.

The rich strike just made has been hailed by us with much satisfaction as the first proof of the correctness of our faith in the increase of richness with depth in our veins, and I will give you such description as I can of the mine at this hurried writing, and will describe more fully when the owners have run further on the vein.

The "*Hidden Treasure*" was discovered in 1875 by Messrs. SPENCER and MILLER, and assessment done; but as the highest assay they got from the ore was 15 ounces silver, they, in the fall of 1877, sold their claim to the present owners, Messrs. GUS BRANTLEY and ROBERT BELL, who commenced work on it late last fall, a sampled assay of the ore they took out giving a return of only 11 ounces Ag to the ton. The ore was galena, having for its associates copper pyrites, zinc-blende, and some little pyrites of iron. The owners, however, had worked an assessment on the adjoining claim above the "Pocahontas," which showed 3 feet of ore carrying rich gray copper, and they had faith enough in it to go to work again this spring; and yesterday, having completed 34 feet of tunneling and gained a depth of 50 feet, they put in a shot which exposed 2 feet of ore, a foot of it carrying heavy gray copper, about four inches of it being nearly solid. I assayed this four-inch streak to-day, and it gave 1134 ounces Ag to the ton, and as the pay-streak appears to-day, they can sort their first-class ore to mill 500 ounces; but as the mineral-streak is widening and improving with every shot, it is hard to give a more definite description at this writing. The owners are "stickers" and hard workers, and well deserve their success. They now have a bank to draw on, their checks being written in muscle, powder, and fuse, and, what is best, never returned "no funds." W.

SILVER PLUME, COLORADO.

Special Correspondence of the Engineering and Mining Journal.

The flourishing village of Silver Plume is situated on Silver Plume Creek, within two and a half miles of Georgetown. New and comfortable houses are rapidly going up, which, in connection with other improvements, and the active, business-like, but always polite manner of the people, lead a stranger to look around for the cause of so much thrift. He need not look far. In the immediate vicinity, on Sherman Mountain, is the famous group of mines, the Pelican, Dives, Baxter, Dunkirk, Silver Plume, Pay Rock, the Terrible Lode, Dove, Cold-Stream, Phœnix, Seventhirty, now known as the consolidated Hercules and Roe, and just across the gulch the Mendota, Frostburg, and Dunderburg. These mines yield ores which vary in quality from a high grade of silver to those which are largely composed of iron, copper, lead, and zinc. Nature made no mistake. Low-grade and lead ores are necessary to mix with high-grade ores, to aid in reducing them. For the smelter, an ore with about 30 per cent of lead is wanted to reduce high-grade silver ores.

Little attention has been paid to making roads from these mines, and thus far it has nearly all been carried down the narrow mountain trails on jacks, at considerable cost. When roads are once made, or, better still, tramways of some sort, a greater quantity of low-grade ores will find a way to the mills.

The Silver Plume Sampling and Concentrating Mill is now the sole property of Mr. Ballou. It is being enlarged in space, and the machinery remodeled and improved. It is doing a business of fifteen tons per day with high-grade and concentrating ores, but its full capacity is thirty tons. It has one crusher, one pair of rolls (to be increased to two), a sizer and spitzkasten, six tiers of jigs (four in each tier), screens with meshes of from five to twelve to the inch, finishing-off ore-settlers, slime tables, sluices, and Cornish "tyes." The motive power is an engine with a seventy-horse-power boiler. The engine also lifts the water for the ore-dressing.

The new mill at the Terrible mine has a crusher, two pair of rolls, sampler, sizing by screens, spitzkasten, automatic jigs, finishing off on a Rittinger table. The ores treated at this mill are all taken from the Terrible mine, and prove to be excellent concentrating ores.

Colorado ore veins are much wider than used to be supposed. My attention was called to cases where, for years, what was supposed to be the wall-rock, on cross-cuts being made, was found to be a mistake, and rich ore was found beyond them, thus establishing the fact that there is no certainty of wall-rock being reached till mica is struck; or, in other words, the ore is contained in decomposed wall-rock, not in gangue, filling, by a subsequent operation, fissure veins. The width of the Pelican and Dives mines has never been ascertained. The old saying about "the rich but narrow veins of Colorado ore" will have to be revised.

The mineral resources of this part of Colorado are beyond estimate, and it is safe to say that mining has only commenced. The rich veins which are all through these mountains, comparatively speaking, have hardly been touched. New strikes are constantly being made, as, for example, near Lawson or Silver Creek, where rich ore is being taken from the La Crosse and Joe Reynolds mines. All the mines in Colorado prove the fact long since known to science, that rich ore is always found at the intersection of the lodes. The latest notable proof of this has been the finding of remarkably rich ore at the intersection of the White and Boulder Nest mines.

At Golden, Messrs. HULL and JONES are engaged in sinking deeper their shaft for coal. It was first sunk 108 feet, cross-cut, and coal taken out for about ten months. Cutting some distance north, they were stopped by water from the bed-rock of the creek, and south the bed gave indications of "pinching out." They took out an average of 50 tons per day, which was of the best quality of lignite found in Colorado. They shipped it to Denver and the mountains, delivering it on the cars at Golden for $3.25 per ton. The bed averaged 8 feet in thickness. They have now sunk the shaft 125 feet deeper, have cross-cut 50 feet, and expect to strike the coal at about 30 feet more.

Considerable discussion has been had by scientists whether these coal measures belong to the Tertiary or Cretaceous period. The question, of course, only applies to the age of the coal, and whether it can be found deeper. Prof. LAKES, who discovered the saurians eight miles south of Golden, has made extended examinations of these coal measures, and he says he finds in them fossil remains of both periods. E.

GOLD MINING IN GEORGIA.

P. H. Mell, A.M. C. and M.E.

(*Continued from page* 97.)

In Lumpkin County there are 228 stamps, and out of this number 134 are in successful operation. These stamps are yielding, not necessarily, enormous dividends, but paying good interest on the money invested. Among the mines opened in this county, and on which mills are located, may be mentioned the following: J. R. Wells, 5 stamps; Ogle & Co., 5; Hussey & Howe, 4; Williams & Lain, 20; Harvey & King, 8; Weaver & Wood, 10; Lawrence mine, 10; Hand mine, 20; Benning mine, 10; Findley mine, 24; Martin & McIntosh, 5; Pigeon Roost, 5; Huff & Roberts, 10; Flandin & Brown, 10; Neal Brothers, 10; Davis & Co., 10; Battle Branch, 10; Barlow & Hand, 40; Sommerauer, 4; Dahlonega, 8.

The last-named was originally owned by LOMBARD & Co., but recently it was purchased by a company of New Yorkers and stocked at $250,000, at $1 per share. The company owns also a considerable area of placer ground, and in the past three or four weeks has been working a Little Giant. This is the only machine of the kind in the State, and I trust the yield at this mine will be great enough to encourage others owning placer mines to adopt the Little Giant. There are a great many fine gravel beds throughout the gold belt that have never been opened for want of water and proper appliances. Some, that come to my mind at this writing, that I have tested in the past, are quite extensive, and give fine colorations from the surface down to the bed-rock. The Dahlonega mine is situated near Auraria, in the region known as "Battle Branch." This name was given to the place on account of a desperate battle fought between Carolina and Tennessee miners many years ago. The country has a good reputation among all classes of miners, and at one time was considered the bonanza of the State. The Pigeon Roost, a famous mine, is located in the neighborhood of Auraria. The owners are now preparing to open this property on a grand scale, with every promise of success.

The most important enterprise in North Georgia, and that which will do most toward thoroughly developing the mining interests, is HAND'S Canal or Hydraulic Ditch. This work is located in Lumpkin County, and is now twenty-six miles in length, six feet wide at the water-line, and four feet in depth. It has a fall of five inches per 100 feet, and a velocity of thirty cubic feet to the second at low water. The water is taken from Yahoola Creek, at the foot of the Blue Ridge. The ditch winds around on the sides of the hills and mountains, in some places crossing deep ravines on high trestle-work, and at other places, by means of boiler-iron piping, it is conducted down the sides of steep mountains, across streams of water, and up the opposite side of the mountain, and emptied into the ditch again that carries it on toward the mining property. There are several long tunnels along the route, one of which passes under the town of Dahlonega. There are 7500 feet of wooden flumes, and over 4000 feet of iron pipes along the line of the canal. The Hand Company has spent, in building this canal, and in improving its mining property, about $200,000. It deserves a great deal of credit for what it has

done, and it is to be hoped it will reap a rich harvest. This company controls and owns the Lawrence, Hand, Benning, and Findley mines. These mines are all located in the immediate neighborhood of Dahlonega, and two of them (the Hand and Findley) are in successful operation. The Lawrence mine was closed down on account of the quantity of sulphurets contained in the ores. When first opened, I am informed, the vein yielded paying amounts of free gold, but as water-level was reached, these free ores gave out, and the sulphurets came in.

The Findley, Hand, and Benning mines are all on the same formation, and, to all appearance, the same vein. They are distant from Dahlonega one or two miles, and are supplied with water from the Hand Canal. At the Findley, the mill is situated on the banks of the Yahoola River, and run by a turbine wheel. Running parallel with the river, and rising immediately from the banks, is a hill about 500 feet in height, through which the veins strike north 20° east, with an easterly dip of about 30°. A large per cent of the ores are very low grade; but, on account of the situation, the vast amount of ores and the cheapness with which they can be handled, it is estimated that thirty cents per ton will cover the entire cost of mining and milling. At the time I visited the mine, the superintendent informed me he was then milling ores that yielded only forty cents per ton. There are, however, some very rich ores found on this property. A small chute was cut some time since that produced very handsome results. This little vein is very irregular—sometimes giving out entirely—but the miner is always well rewarded whenever it is found.

The ores on this property, as well as on the Hand, Neal, and Benning properties, consist of a loose ferruginous sandstone that is readily pulverized, and, where decomposition has thoroughly taken place, the gold is easily saved by the amalgamation process. As depth is attained, however, my impression is, the sulphurets will crowd in such masses as to require special treatment. I am strengthened in this opinion by the fact that the Lawrence mine is situated but one half-mile from the above mines, and the formation is identically the same. The large mass of oxide of iron found in the upper portions of the vein is sure evidence of the presence of sulphurets in the lower portions. The decomposition of the ores has changed the pyrites into the form of the oxide, and liberated the gold.

The flooding system is adopted here; that is, the water from the canal is brought upon the highest point of the hill, and, after the miners have knocked down and broken up forty or fifty tons of ore and slate, the water is turned loose and washes the material down the side of the hill, with fearful speed, into the mill-house. What portions can be caught by mechanical means are run through a 24-stamp battery. Of course, by the time the water, loaded with the ore, reaches the foot of the hill, such velocity has been attained as to necessarily carry all the fine material through the works into the creek beyond. In this formation a great deal of the gold is very fine-grained, and in mining the ore, a large percentage of the gold is detached from the bulk of the ore. Much of the slate that carries gold, and lying between the bands of quartz, is finely pulverized by the picks and drills. All this fine material must pass through the mill-house and become entirely lost.

It seems to me that the best plan would be to rig up an arrangement by means of which the water and ore may pass immediately through the battery, so as to catch as much of this fine gold as possible.

I am satisfied that, by some such arrangement, at least fifty per cent more gold will be saved than by the system now adopted. This is certainly worthy a consideration.

THE PRESENT AND FUTURE OF THE ANTHRACITE COAL TRADE.

As Seen by Mr. John B. Smith, Superintendent of the Pennsylvania Coal Company.

A New York *Herald* reporter gives the following as the substance of a recent interview with Mr. JOHN B. SMITH, Superintendent of the Pennsylvania Coal Company:

Reporter—From what you know of the condition of the men in your employ, do you believe there will be a strike?

Superintendent—When? What do you mean?

Reporter—You certainly can not be ignorant that meetings of your employés have been held and the question of a strike for an increase of wages discussed and a demand made for the return of the ten cents per ton taken from their wages over a year ago?

"No. The men are not foolish enough to strike at such a time as this."

"Will the company make any advance in wages?"

"No, sir. They will not make any advance in wages when they're making nothing. A man is a fool to think it. Why, see here; there isn't a company doing business and sending coal to market that isn't losing money. The Delaware, Lackawanna, and Western, the Delaware and Hudson, and Gowen's Reading Company borrowed millions upon millions of dollars to pay their interest, and that, too, when two millions of tons of coal were mined last year. What nonsense!

CAPITALISTS LOSING MONEY.

"The country is bankrupt. These companies are simply floating along—one day to sink. People won't look at the question seriously. They're ballooning. They don't want to meet the naked truth, and, therefore, avoid it. Things are bad. When the Pennsylvania Coal Company has to borrow money to pay interest on its debt and run its mines, it will stop short, quick. Who will loan them money to do it? I won't, nor you won't. It's all folly to think of increase of wages. The market is glutted. The coal yards all over the country are full of 'stock' coal. We have 100,000 tons in stock at Hawley now, and can not sell it. Last month we mined considerably less than our quota, and this month we are given 117,000 tons apportioned to us of the grand bulk to be produced. What's the use?"

Reporter—Will there be full time this month, provided the men are willing to work at the present rates of remuneration?

Superintendent—Can't tell that. If we can't sell our coal, we are not fools enough to mine it. We are dumping too much of it. I tell you the market will not take it.

Reporter—But you know that coal is now ruling at prices from $1 to $1.50 per ton higher than it was when you forced the men to a reduction last year.

Superintendent—Yes, I know it is so printed, but there isn't a man or company that isn't losing money—fifty cents per ton on every ton they mine. Then, again, the market is underbid by many sellers, who are pressed for means and must have it. In such cases they sell for fifty cents per ton less than printed prices to enable them to tide over, and there are a good many who are tiding over in these times.

Reporter—What is your impression of the success of the combination?

Superintendent—If it had established the prices as well as limited the tonnage, it might have produced a good effect.

Reporter—But isn't there an opportunity given to producers, of which they avail themselves, to exceed in mining the quota given them? I have trustworthy information of the fact that the Lehigh Valley Company exceeded its quota 50,000 tons last month.

Superintendent—You have, eh? Well, such things may occur, and I don't wonder. The combination have put the figure up too high again. It can not be consumed. The Lehigh Valley and Reading companies were the fastest for it. They want the freight money to help them out.

CONDITION OF THE WESTERN TRADE.

Reporter—How about the Western trade?

Superintendent—Oh! that Western trade (with an air as if it was a disagreeable reference). Now, I'll just tell you about that Western trade, so far as we are concerned. I wouldn't agree to take seventy-five cents per ton and pay the expenses and losses we have undergone. It is a big loss to us.

Reporter—Have the miners formally made a demand for an increase of wages?

Superintendent—They have sent in a petition, the substance of which is of an interrogative character. It asked if coal had now advanced to a standard that would enable them to return the ten per cent reduction. It has been forwarded to the New York office, but our New York folks can't do any thing. The condition of trade will not warrant it.

Reporter—Are there, to your mind, any encouraging signs of a revival of our industries approximating "good times" again?

Superintendent—I know of nothing that is really encouraging in that respect. I wish I could assure the numerous readers of the *Herald* that there is a good time coming. But I don't see it.

There can be no question that Mr. Smith reflects the minds of the Board of Directors. He has but recently returned from New York, where he has, doubtless, discussed with the President this very question of wages, and is impressed adversely to the demand of the men.

CORRESPONDENCE.

Improved Tripod Heads.

EDITOR ENGINEERING AND MINING JOURNAL:

SIR: It was only within a few days we discovered in your issue of July 13th, an attack upon our lately-patented improvement in tripods. The cut you have, so kindly to us, placed under head of INFRINGEMENT, represents our improvement so nearly that it must refer to us.

Whether our patent is an infringement upon the Hoffman or any other, is, *when the question is raised*, we suppose, to be determined by the proper legal tribunals. Engineers certainly will not invest Mr. HARDEN with privileges of judge and jury.

The commencement of legal proceedings is the notification of the opposite party, and as, though more than a month has elapsed since the date of this Mr. HARDEN'S communication, we have neither received notice nor heard of these legal proceedings, we are fully justified in pronouncing the statement at least incorrect. Instrument-makers understand these proceedings as simply a *trick* got up to adorn a catalogue. Some individual with poll-parrot propensities is selected and *crammed*. He writes to the paper, and his communication is copied into the catalogue as the spontaneous, honest opinion of profession and press.

As our improvement is *decidedly superior* to the other, we can afford to be complacent over the attack. A careful examination of the "infringement" cut will demonstrate this superiority. The objections are childish; if the plate springs, it can readily be made thicker; if the ball is too small, it can readily be enlarged without altering the principle, design, or construction. The mechanics and mathematics of our critic are equally at fault.

A reference is made to an unfortunate friend in the field. We are enabled to locate this unfortunate person pretty closely, and simply say that when he tested the attachment to his instrument in our office, he was unable to move it in the least. That the instrument when carried upon the shoulders reels and sways about "as the head of a man does upon the shoulders after being seasick for a month," may be true; but as any thing else carried over these same shoulders we suppose would do the same, it is no argument against our improvement. That the instrument does this on the tripod is *not* true, unless negligently or purposely made to do so.

To such of our friends as this reaches we would say they need have no fear on this infringement question. We will protect them on that. We would also say that they may rely upon our improvement being attached without injury to their instruments; to its motion being double that of the other—sufficient to form some inducement for a change. We would not advise them to have this other attachment placed upon our instrument, nor upon any good instrument, as the unequal strain upon the centers will interfere with the correct working of any good one.

Respectfully, ALFRED YOUNG.

MINING NEWS.

CALIFORNIA.

THE BODIE DISTRICT.

From the mining summary in the *Standard* of the 7th inst. we extract the following: "The recent rise in the value of Bodie stock to $25, and a shipment of $134,000 in bullion from that mine as the result of a ten days' run, has given new life to prospecting in this district. The strike in Bodie was only the forerunner of important developments in a large number of other claims. First came the report of a rich body of ore being uncovered in the Belvidere, in which are strata assaying from $1000 to $5000. Several days during the past week this stock was in great demand, and rapidly advanced from $1.50 to $4 on the streets of Bodie. It then fell back a little, but is still considered a good stock for investment. The Bulwer also steps forward with rich developments, and as it is the oldest location in the district, there are no end of speculations as to how much the stock is worth, and the pros and cons of an early rise. There are many who believe that the Bulwer will take the lead in this district. The Bechtel is making a good showing, and the first shipment of bullion from its mill will undoubtedly be very favorable. The Red Cloud, also, is doing considerable work. The mine has been cleared from water, and as ore is being regularly shipped to the Miners' Mill, returns may soon be expected. The Booker shows a fine 4-foot vein, assays promise it to be rich in mineral. The Richer looks first-rate, and the best indications for opening up a rich ledge. The large ledge in the Sigourney [illegible] exist tunnel advances, and a perpendicular shaft sunk, and then dri[illegible]oves as the probably open as fine a body of ore as can be found in the [illegible]ts run, would very camp. The new hoisting works recently erected at the Spaulding are doing exce[illegible]ent work, and as soon as the timbering of the shaft is completed, and sinking again commenced in good earnest, a good report may be expected from this mine. The McClinton and Tioga have been placed upon the Board in San Francisco the past week. A different class of arri-

vals is noticed from any heretofore coming to Bodie—men of means who are in search of paying investments. Nowhere on the Coast are there more opportunities daily presented for men of capital. The majority of our prospectors being poor, they can not develop their claims without assistance, however rich may be the indications. In presenting the mining review this week, it is with the belief that this is the brightest moment in the history of Bodie up to the present time."

ASSESSMENTS OF CALIFORNIA QUICKSILVER MINES.

"The managers of the New Almaden quicksilver mine, of Santa Clara County, complain of the unjust assessment of its product. From an editorial in the San Jose *Mercury* of July 31st, we learn that the average assessment on the product of prominent quicksilver mines of the State for the past three years has been as follows:

	Per flask.
Redington, Napa County	$15.89
Sulphur Bank, Lake County	10.08
Great Western, Lake County	9.84
Oakland, Sonoma County	7.11
New Idria, Fresno County	10.74
Guadalupe, Santa Clara County	13.36
New Almaden, Santa Clara County	17.66

"We have before us a tabulated statement of the actual number of flasks shipped from each of these mines during a period of two years, and an approximation of this current year's product, judging by the returns of the first six months, the result of which appears to be, that during that time the Redington produced 25,494 flasks; Sulphur Bank, 30,849 flasks; Great Western, 14,266 flasks; Oakland, 4687 flasks; New Idria, 17,846 flasks; Guadalupe, 18,952 flasks. So that the six mines produced 112,094 flasks in all, and were assessed on an average of $11.90 per flask. The returns of the largest mine, the New Almaden, are, for the same period, 56,488 flasks, on which the average assessment is $17.66, forming rather more than one half of the total production of the other mines named above. We notice, also, that the valuations of mines, lands, improvements, and personal property on the first six named mines amount for three years to $1,334,894 in all; whereas the similar valuations on the New Almaden are $997,645. Now, with such figures before us, there is need of some satisfactory explanation as to the great disproportion which the burdens on the New Almaden show to those of the other six mines enumerated, in proportion to the product of each of them. According to our understanding of these returns in our possession, there is a clear over-assessment on the sundry valuations for the three years against the New Almaden mine of about $325,000, as compared with the other establishments, and of $5.76 on the average assessment, per flask. This appears to be discrimination against the former out of reason, and, of course, places it at the greatest disadvantage in the manufacture of quicksilver when compared with the lighter taxation imposed on its competitors. It seems, therefore, opposed not only to all sound sense, but to fair commercial policy, that such an unequal distribution of assessments should be allowed to continue. The public are also interested in guarding so important an industry from being impeded by an extortionate drain on its advantageous development."

Gold has been discovered in several places in the vicinity of San Mateo. A number of workmen have formed a corporation, under the name of the Tambaroora Mining Company, and have located claims at a point about fourteen miles from the city. Gold is found close to the surface, and from the assay of several specimens taken from a depth of about ten feet, it is estimated that the ore will yield $73 to the ton—$57.50 in gold and $15.50 in silver.

Four hundred and thirty kegs of powder were exploded at the Deer Creek mine, Smartsville, on July 18th. It was a splendid success The company have just completed a bed-rock tunnel, hardly 300 feet long, at a cost of over $200,000, which opens up one of the richest gravel mines in the State.

The Nevada *Transcript* in speaking of the richness and products of the hydraulic mines of Nevada County says: "We will cite the monthly yield, at the present time, of five of these bonanzas, with the working of which we are personally acquainted. The largest of these makes an average monthly clean-up of $50,000; two others of about $40,000 each; still another of some $30,000, and another that cleans up from $10,000 to $12,000 every three or four weeks. For various reasons, which mine owners understand without explanation, we are requested not to name these mines in connection with what they are doing until after the season's run has been made. To those who keep posted on such matters their whereabouts in the county can be easily surmised."

It is rumored that the Phenix mine of Amador County has been sold for $2,000,000.

IDAHO.

The Salmon River Mines.—The Salt Lake *Tribune's* correspondent, writing from these mines, says: "The Charles Dickens mine was located in the summer of 1876. A tunnel is now in 390 feet on the ledge, and taps the mine a few hundred feet deep. Five chutes connect the stopes with the tunnel, and the breast shows four to five feet of ore. Mr. Norton, the owner, is erecting two arastras to work his gold ores, and ships a little high-grade silver ore. The Envy, near the Dickens, was located in 1875, by John Morrison. It is a four-foot vein, and the character of the rock is the same as the Dickens. The whole mineral belt of Yankee Fork is white porphyry, outside of which not an ounce of ore has been discovered. The ores are sulphurets, and the general average of the whole camp assays half gold, half silver. Those who have carefully sampled the rock of this district give the average value of the ore of all the mines at $200.

"Up Jordan Creek about eight miles is Estes Mountain, which is the highest point on the belt. The mines in this mountain run high in gold, and I noticed the higher the mines are on the belt, the richer in gold, while those mines that are down low invariably turn into sulphuret ores. On Estes Mountain are four parallel ledges—the Hidden Treasure, Montana, Pioneer, and Cynosure.

"The Tonto mine contains a ledge about eighteen inches wide, with the shaft down eighteen feet. There is in the ledge a small streak of very rich ore.

"One hundred and ninety thousand dollars have recently been paid for two mines in Yankee Fork—the Custer and Unknown. This sale settles all doubts as to the permanency and value of the mines in that section."

MONTANA.

We are indebted to the *Butte Miner* of the 6th inst. for the following concerning the mines in the vicinity of Butte:

"A brighter day is evidently about to dawn upon the mining interests of Butte. Heretofore our great want has been an increase of milling facilities; but now this want is fortunately to be at least partially supplied. The stamps dropping at Butte within the past year have been as follows:

Dexter mill, dry crusher	10
Walker's mill, "	15
Lexington mill, wet crusher	10
Burlington " " "	4
Total	39

"The Burlington mill has an 8-stamp battery, but only one half of it can now be employed, owing to insufficient amalgamating facilities. The effective reduction works of Butte in the way of stamp mills is about to receive the following accessions: The Silver Bow mill with fifteen, the Clipper with five, and the Grove Gulch mill with five stamps; all new mills will be at work long before winter sets in. This will be an addition of twenty-five to the present number of working stamps. Besides this, five will be added to the battery of the Walker mill; five to the Dexter; the Centennial will soon be started up with ten, and upon the arrival of the machinery now *en route*, the full battery of eight stamps at the Burlington will be worked on full time. Altogether, the number of working stamps about Butte is to be increased within the present year from thirty-nine to eighty-three, besides the new arastra, about equal to a four-stamp mill, which is being quilt by Rundell & Co., in Brown's gulch. With the present number of stamps more than doubled, at least double the force as yet employed will be at work in the mines; double the amount heretofore paid in wages will pass into circulation every month, and we mistake greatly if Butte's population does not also very speedily experience a doubling-up process. Still better than this, the proprietors of the new mills are not too hard up to pay the old wages to the men working in their mines.

"At Glendale, the Hecla Company's stamp-mill will be ready to start up in three weeks, when it will be employed in reducing the free milling ores from the Trapper and Cleve lodes, of which many thousand tons are already in sight.

"Leaching works, for the reduction of silver and copper ores by the process so successfully tried in Utah, will shortly be in operation at Glendale.

"At Trapper City, the wire tramway for the Cleve mine is completed, and is used in the transportation of ore from the mine to the wagon road. Air-compressors are employed to ventilate the mines, and in hoisting ore on the Atlantic lode.

"At last accounts, the small water jacket was making a very successful run."

UTAH.

We take the following from the *Tribune* of August 10th:

"THE STOCKTON DISTRICT.

"The National mine, owned by a Cleveland company, is under the management of Mr. W. A. Pratt, about five tons of ore being taken out daily, averaging 56 ounces of silver and 65 per cent lead. The working force is soon to be increased from five to eight men.

"The Leonora mine is under the same management. Four men are at work on a two-foot vein of pure galena, which assays forty ounces in silver and 60 per cent lead. Considerable dead work has been done on this property, which is now in excellent condition for the employment of a large force in stoping and drifting. Other prominent mines of the district are looking equally well, the majority of them being worked under lease.

"The Watterman smelter has again started up after a thorough repairing. The other stack will soon be in operation chiefly on Hidden Treasure ore, though arrangements have just been completed for the purchase and reduction of the Mono dump.

"For several years past Stockton has been largely dependent on Ophir and Dry Cañon, and the prosperity of the town has varied, as the out-put of those camps increased or diminished.

"The great reduction in the price of lead was for a time a severe and crushing blow to the future of the camp; for it is everywhere conceded that with the investment of a little capital, Stockton would lead the van in the purity and quantity of its lead production.

"However, as lead won't pay, attention is being directed to the extraction of silver with the most encouraging results.

"THE PARK CITY DISTRICT.

"The McHenry mine lies one half mile east of the Ontario. There has recently been found in the McHenry a fine chamber of ore, consisting of silver, manganese, copper, and chloride of silver in good quantities. This ore is now being taken to the mouth of the tunnel, assorted, and stowed away. Average assays from it will not fall less than $60 per ton silver. This late strike is causing quite an excitement among the many prospectors.

"Among the good claims near the 'Mc' which have ore assaying well are the Tip, Portland, Butler, Wilson and Barrett, Lady of the Lake, Pluck and Luck, Switzerland, Parley Park, Uncle George, Central, Montecello, and Romeo. The claims further west, near the Empire ground and Walker and Webster's mine are also looking well, and daily we hear of good prospects from there.

"Work on the new shaft of the Ontario Silver Mining Company is progressing very rapidly. The superintendent of the mine in his report for the ten days ending July 31st, reports that the new shaft is down 288 feet, and that they are now sinking at the rate of 4 or 5 feet per day.

"Advices from Salt Lake City, Utah, speak encouragingly of the prospects in the Kearsarge mine, although no strike has yet been made."

NEW PATENTS.

The following is a list of the new inventions relating to Iron, Coal, Mining Machinery, Chemical Apparatus, and the treating of Precious Metals, etc., from *The Official Gazette of the United States Patent Office* for the weeks ending June 11th and 18th:

June 11th.

No. of Patent.	Title of Invention.	Name of Inventor.	Residence.
204,649	Piston Valves for Engines	Robert W. Aitken	Buffalo, N. Y.
204,654	Hydraulic Power Apparatus	Edward M. Butz	Allegheny, Pa.
204,686	Machines for Making Wire Cables	H. B. Schutt	Joliet, Ill.
204,709	Methods of Making Gas Burners	George Bray	Leeds, Eng.
204,750	Steam Boilers	William Menzies (a)	New Castle, Eng.
204,773	Processes for Amalgamating Chloridized Ores	James O. Stewart	Georgetown, Colo.
204,787	Manufacture of Wire	Wilhelm Bansen	Bodenbach-on-the Elbe, Austria.
204,788	Processes for Tempering Steel	George Banister	Columbus, O.
204,792	Steam Generators	John W. Bookwalter	Springfield, O.
204,816	Apparatus for the Manufacturing of Peat Bricks	Friedrich Hack	Hamburg, Ger.
204,824	Baths for Tempering Steel	John Humphreys	New Haven, Conn.
204,846	Case-Hardening Iron	Gracie S. Roberts	Brooklyn, N. Y.
204,849	Crushing and Pulverizing Machines	George E. Sherwin	Hackney, Eng.
204,869	Weighing Scales	Hosea Willard (b)	Vergennes, Vt.

(a) Assignor ½ right to John Storer, Marlborough, N. Y.
(b) Assignor to himself and F. W. Coe, same place.

June 18th.

204,886	Utilizing Heat from Bessemer Converters	A. Cooper	Darnall, Eng.
204,888	Weighing Scales	George W. Craig	Arbuckle, W. Va.
204,894	Ditching Machines	H. Gonellaz	Vermillionville, La.
204,896	Submerged Pumps	Benjamin J. C. Howe	Syracuse, N. Y.
204,901	Testing Machines	Francis S. Kinney	New York, N. Y.
204,916	Circuit Changers in Electric Gas-Lighting Apparatus	Frank V. Sandford (a)	New York, N. Y.
204,926	Devices for Feeding Air Furnaces	J. A. Warden	Sewickley, Pa.
204,945	Pulverizing Apparatus	Henry Bolthoff	Central City, Colo.
204,958	Pumps	Charles H. Duwelius	Richmond, Ind.
204,973	Double-Acting Pumps	Henry J. Humphrey	Grundy Center, Ia.
204,976	Metal Rolling Mills	William R. Jenkins, Jr.	Bellefonte, Pa.
204,996	Ore Giggers	William H. Plumb (b)	Mauch Chunk, Pa.
205,032	Thermo and Electric Gas Controlling and Lighting Apparatus	George D. Bancroft (c)	Lynn, Mass.
205,043	Rotary Steam Engines	John F. Brown	Indianapolis, Ind.
205,052	Double-Action Pumps	Thomas Glaze	Pittsburg, Pa.
205,074	Rerolling Old Rails	Clayborn A. Carr	Casey, Ill.
205,089	Governors for Engines	Robert Hooper	Baltimore, Md.
205,144	Electric Lamps	William E. Sawyer	New York, N. Y.

(a) Assignor ½ right to Joseph W. Bartlett, New York, N. Y.
(b) Assignor to Joseph A. Sterling, New York, N. Y.
(c) Assignor to George F. Williams, Dedham, Mass.

NOTES.

THE CLIFTON COAL COMPANY, of Clifton, W. Va., has made an assignment Liabilities $150,000, of which $125,000 are secured by mortgage on the real estate

A QUARRY OF LITHOGRAPHIC LIMESTONE has been discovered in Algeria, at 8 kilos. distance from the port of Oran. The quality is declared equal to that of the stone from the old quarries of Munich, now exhausted.—*Chem. News.*

TRUJILLO.—Some American capitalists are treating for the purchase of the Trujillo railways of Peru with the design of developing the great coal deposits in the vicinity of Trujillo.

SULPHUR in immense quantity has been discovered at Chillan in Chili. It is said to be so pure as to require only mechanical treatment to fit it for the market.

LICK MINERAL RAILROAD.—This road is now under construction. It will be 1¼ miles long, from the Springfield, Jackson, and Pomeroy road to the Hill coal mines in Jackson County, O. It is built by Price Brothers, of Jackson, O., who have bought the Hill mines, and expect to work them extensively.

THE COLORADO "MINER," OF GEORGETOWN.—This paper, bearing date August 3d, 1878, comes to us profusely illustrated with a variety of views of the prominent points of interest in Colorado. Its mines, railroads, and numerous industries are shown and described in a very attractive manner. This issue of the *Miner* reflects credit upon its publisher, and upon the artists who have made the sketches. The *Miner* is a good paper, if we don't quite agree with it upon some points, and it worthily represents the great mining interests which center in the "Silver Queen City."

AMERICAN COAL IN ITALY.—A dispatch from the United States Consul at Genoa to the Washington government, indicates that important results are likely to flow from the recent effort of a Philadelphia coal company to introduce American anthracite coal into the non-coal-producing regions of Southern Europe. Two cargoes have been received during the past quarter, and the experiment which at first threatened failure, has proved a gratifying success. When first put on the market, the highest bid was but 22 fr. ($4.25) per ton—an amount insufficient to cover freightage from New York. On its becoming known that the coal was well adapted for smelting purposes, the price at once advanced to 40 fr. ($7.72) per ton, which covers cost and freights, and leaves a fair margin for profits. Over 200,900 ton of English coke are annually consumed in the Mediterranean basin.—*Iron.*

EMISSIVE POWER AND THE DIFFERENT KINDS OF HEAT WHICH CERTAIN BODIES EMIT AT THE TEMPERATURE OF 100°.—Prof. Villari.—There is for each body a thickness possessing a maximum emissive power. This thickness varies with the substances, being from 3·45mm for powdered rock-salt to 0·03mm for Indian ink. The thickness varies also with the aggregation of the matter; thus, for lamp-black deposited directly it is 0·200mm, while it does not exceed 0·069mm if the lamp-black has been previously stirred up with sulphide of carbon. As the same laws extend to the absorbent power of bodies, thermoscopes, in order to produce their maximum effect, should be covered with a layer of lamp-black 0·2mm in thickness. Different bodies have different thermic and thermo-chroic emissive powers—that is to say, if the heat emitted at 100° by each of them were visible, they would all appear differently colored with different intensities.—*Chem. News.*

THE MICROPHONE IN COLLIERIES.—All who have visited a fiery mine have listened to the peculiar hissing sound given out by pores and joints in coal-seams from which gas is being evolved, varying in intensity with the quantity delivered. Having premised this, Mr. Charles E. de Rance, F.G.S., A.I.C.E., asks in the *Times:* "Could not a combination of the microphone and telephone be constructed so that these sounds emitted underground may be reproduced in the colliery office, and a permanent record be kept by means of the phonograph?" He believes that such an instrument consulted every morning by the firemen previous to their daily inspection of the mine would indicate not only to a certain extent the quantity of gas given off, but the exact part of the mine from which it was given off; for several "transmitters" might be placed in each coal-seam, and a separate phonograph, connected with each "receiver" in the office.—*Iron.*

COST OF DIAMOND DIGGING.—We take the following from *Scribner's Magazine:*

"Diamond digging is expensive. We will take, for example, the average digger, who owns a quarter of a claim and works his own ground. He can take his choice, according to locality, of paying from $1000 to $10,000 for his quarter claim—that is, 7½ feet by 31 feet. It pays best to buy high-priced ground. His outfit of digging tools, washing machine, etc., will cost say $1000. His gang of twenty Kaffirs will cost him five dollars each per week, or $100. One overseer besides himself, twenty-five dollars per week. Meat and tobacco for Kaffirs, five dollars per week extra. Then expenses of carting and taxes will make his total outlay at the least $200 per week, or over $10,000 a year, exclusive of his own expenses of living. If one can not spend $800 per month, I believe it is of no use to go to Kimberley to dig for diamonds. To offset this expense is, of course, good luck in 'finding,' and from the very beginning of operations the digger not only clears expenses, but makes a handsome profit. There is no doubt that diamond digging pays two thirds of those who engage in it well. The fortunes made, as a rule, are small and numerous. Rarely has any one cleared $50,000 from any one claim. Success seems to be very evenly distributed, and chiefly attainable by those who can begin with say from $3000 to $5000.

"The amount of money paid for Kaffir labor alone is enormous. For instance, there are a thousand wheels; allowing five Kaffirs to each, we have 5000 laborers daily at the mine. These, at $5 each per week, are paid $25,000, or $100,000 per month, or $1,200,000 per year, and this for 5000 Kaffirs only. The assessment of the Kimberley mine for the year 1877, simply for the purpose of distribution of rates or taxes, was $5,151,500, or about $7,000,000, if we add a third to bring the first amount up to selling prices. It apparently never occurs to the digger to inquire into the unstable nature of the whole Kimberley fabric. Immense sums of money are invested in and around the mine, and owners of town lots, of houses, of public buildings, and of claims, have settled into the calmest feeling of security. But no fear disturbs the digger of Kimberley. His belief in the immortality of the mine is supreme. But there are influences at work which are crowding the small capitalist from the fields. The increasing depth, crumbling reef, inflowing water, are fast multiplying the expenses of working. The great bugbear of the digger is the word 'company,' but even now small proprietorships are becoming merged in large aggregations of claims, and the next phase of mining operations must undoubtedly be that of several large and competing companies, or perhaps a single one controlling the whole mine. Then the individual romance of diamond hunting will be over. But there is no danger that the diamond will ever become common. Nature has placed it in lands difficult of access, and it is likely to remain a royal gem, surrounded with the seclusion of royalty."

STATISTICS OF COAL PRODUCTION.

This is the only Report published that gives full and accurate returns of the production of our Anthracite mines.

Comparative statement for the week ending August 10th, and years from January 1st:

TONS OF 2240 LBS.	1878.		1877.	
	Week.	Year.	Week.	Year.
Wyoming Region.				
D. & H. Canal Co..	69,088	1,202,016	.....	1,283,899
D. L. & W. RR. Co.	50,200	1,175,596	.....	1,306,199
Penn. Coal Co.....	17,742	465,003	13,578	652,333
L. V. RR. Co.....	23,532	467,970	7,672	582,789
P. & N. Y. RR. Co..	1,120	17,340	.....	32,728
C. RR. of N. J.....	37,245	541,535	.....	857,206
Penn. Canal Co....	19,285	181,759	396	217,206
	218,212	4,051,219	21,646	4,932,360
Lehigh Region.				
L. V. RR. Co.....	73,303	1,417,365	81,681	1,792,557
C. RR. of N. J.....	44,506	749,615	18,237	895,095
D. H. & W. B. RR..	60	15,692	1,017	9,877
	117,869	2,182,672	100,935	2,697,529
Schuylkill Region.				
P. & R. RR. Co.....	166,164	2,645,916	144,702	3,662,526
Shamokin & Lykens Val.....	19,624	300,162	12,368	372,561
	185,788	2,946,078	157,070	4,035,087
Sullivan Region.				
Sul. & Erie RR. Co.	382	19,061	514	6,289
Total	522,251	9,199,030	280,165	11,671,265
Increase.....	242,086	.....	.....	.....
Decrease	.....	2,472,235	.....	.....

The above table does not include the amount of coal consumed and sold at the mines, which is about five per cent of the whole production.

Receipts of Coal at Boston, for the week ending August 9th and year from January 1st:

TONS OF 2240 LBS.	1878.		1877.	
	Week.	Year.	Week.	Year.
From Alexandria and Georgetown.....	1,790	44,229	460	40,564
Philadelphia.....	11,522	364,486	37,668	386,965
Baltimore.....	3,134	92,179	1,400	79,751
Other places.....	2,048	151,553	9,285	176,594
Great Britain	.....	15,061	.....	11,353
Nova Scotia.....	337	9,008	1,611	16,109
Total.....	18,831	676,517	50,424	701,336

Receipts and shipments of coal at Chicago Ill., for the week ending August 10th, and year from January 1st:

	Week. Tons.	Year. Tons.
Receipts.....	39,605	941,778
Shipments.....	5,271	127,331

Belvidere Delaware Railroad Report for week ending August 10:

	Week.	Year. 1878.	Year. 1877.
Coal for shipment at Coal Port (Trenton).....	804	3,752	12,445
Coal for shipment at South Amboy	11,999	298,321	368,289
Coal for distribution.....	3,543	100,083	103,036
Coal for Company's use.....	1,075	47,542	44,013

The Exports of Coal from Baltimore for the week ending August 10 were 103 tons, and since January 1, 21,416 tons, as against 21,547 tons for the corresponding time in 1877.

The increase of shipments of Cumberland Coal over the Cumberland Branch, and Cumberland and Pennsylvania roilroads amounts to 106,538 tons, as compared with the corresponding period in 1877.

The Production of Bituminous Coal for the week ending August 10, was as follows:

Tons of 2000 lbs., unless otherwise designated.

	Week. Tons.	Year. Tons.
Cumberland Region, Md.		
Tons of 2,240 lb.....	32,473	875,485
Barclay Region, Pa.		
Barclay R. R., tons of 2,240 lbs.....	5,869	183,130
Broad Top Region, Pa.		
Huntingdon and Broad Top R. R.....	3,153	84,727
*East Broad Top.....	467	25,930
Clearfield Region, Pa.		
*Snow Shoe.....	129	14,161
*Tyrone and Clearfield.....	10,951	708,217
Allegheny Region, Pa.		
*Pennsylvania R. R	2,122	117,966
Pittsburg Region, Pa.		
*West Penn R. R.....	1,665	108,790
*Southwest Penn. R. R.....	285	15,041
*Penn & Westmoreland gas coal, Pa. R. R.....	6,353	395,504
*Pennsylvania R. R.....	1,554	240,090

*For the three days ending July 31.

The Production of Coke for the three days ending July 31:

Tons of 2000 lbs.	Week.	Year.
West Penn. R. R.....	1,488	49,423
Southwest Penn. R. R.....	7,358	450,549
Penn. & Westmoreland Region, Pa. R. R.	2,554	42,039
Pittsburg, Penn. R. R.....	1,012	55,945
Total.....	12,412	597,956

COAL TRADE REVIEW.

NEW YORK, Friday Evening, Aug. 16, 1878.

Anthracite.

The demand for anthracite coal does not improve, while prices are steadily becoming more disturbed, owing to the excessive quantity of coal that has been put on the market during the past two months, and, in fact, during the whole year. The Reading Company's drawback has had a greater effect upon prices through anticipation of low-priced coal to be offered from the Schuylkill district, than from any important quantity of this coal being forced upon the market. We have never seen dealers at this season of the year with so little hope of an active fall trade as now. The companies have been trying to encourage the public in the belief that the combination must of necessity be a success, but buyers are wise enough to see that, when the Board of Control decides that it will ignore the object for which the combination was formed, viz., to regulate the supply to the requirements of the trade, then they are justified in withholding their orders as much as possible in expectation that trouble will arise from dissatisfaction among the producers. The condition of the minds of buyers is such now, that prices much above those that ruled last year would attract but little attention. For this state of affairs the Board of Control can largely blame itself. Had it restricted tonnage sufficiently, it would at least have held the confidence of the public. If we are to see a fair fall trade, the Board of Control must realize the actual condition of trade, and show that it is determined to reduce supplies to the demands of the market. In our editorial columns we call attention to a cloud, considerably larger than "a man's hand," which is looming up upon the horizon of the coal trade.

As we predicted—before the combination was formed—would be the case, the wants of the companies and the varied array of human nature in their officers, are tending to rob this organization of the advantages that it sought to secure.

During the past two weeks the press has contained numerous reports of strikes and rumors of further ones. Those that have occurred have been only of a local character and are about settled. There is little prospect of a general strike, unless the demagogues, of which Pennsylvania has a superabundance of the worst kind, are able to influence the men to enter into it, with the object of getting votes in the coming elections in the interest of "labor reform" (!). The miners have been receiving but very poor wages during the past two years, and are not in a position to make an extended strike. Were they to strike for say one month, they would undoubtedly confer a favor on the companies, even though some of these might not think so, and at the end of that time the miners would probably have to yield and be in the power of their employers for many months after.

The production of anthracite coal last week was

522,251 tons, as against 291,253 tons the previous week, and 280,165 tons the corresponding week of 1877. The total production from January 1st to August 10th was 9,199,030 tons, as compared with 11,671,265 tons for the like period of last year, showing a falling off this year of 2,472,235.

Bituminous.

Much the same state of affairs continues in the bituminous trade as has ruled for weeks past. Business is confined almost entirely to small orders, which do not aggregate an important tonnage. The shipments are mostly on the large contracts made early in the season. Our reports show that the production so far this year is ahead of the amount up to the corresponding time in 1877. A break in the Chesapeake & Ohio Canal has delayed shipments by that route, but they will undoubtedly be resumed in a day or two.

New York.

Wholesale Prices of Anthracite Coal for August Delivery f. o. b. at Tide Water Shipping Ports, per ton of 2240 lbs.

	Lump.	Steamer.	Grate.	Egg.	Stove.	Chestnut.
WYOMING COAL.	$	$	$	$	$	$
Lackawana, at Weehawken	3 60	3 60	3 60	3 75	4 20	3 60
*Pittston, at Newburg	3 45	3 45	3 45	3 60	4 05	3 50
L. Val. Coal Co., at Amboy	.....	3 75	3 50	3 60	4 10	3 50
Kingston at Hoboken	3 50	3 50	3 60	3 75	4 20	3 50
Old Co.'s at Port Johnson	4 40	.....	4 05	4 05	4 20	3 60
Lehigh Coal Exchange	4 10	.....	3 90	3 90	4 10	3 50
Wilkes-Barre at Pt. Johnson	3 60	3 60	3 60	3 75	4 20	3 60
Plymouth Red Ash at Port Johnson	.....	.....	3 60	3 75	4 30	3 70
Swoyers at Eliz. Pt. or S.A.	3 75	3 75	3 60	3 75	4 20	3 60
LEHIGH COAL.						
L. V. Coal Co., at P. Amboy.	4 10	.....	3 90	3 90	4 10	3 50
Cross Creek, at Port John.	4 00	3 90	3 90	3 90	4 20	3 60
Buck Mount. Vein at Elizabeth Port o S. A.	4 25	4 00	3 90	4 10	4 25	3 60
SCHUYLKILL COAL						
At Pt. Richmond, Phila.						
Hard White Ash.	3 30	3 30	3 30	3 45	3 85	3 35
Free-burning W. Ash.	.....	.....	3 25	3 40	3 85	3 25
Schuylkill Red Ash	.....	.....	.....	3 70	3 85	3 25
Lorberry	.....	.....	3 70	3 85	3 85	3 35
Lykens Valley Vein	.....	.....	3 70	3 95	3 95	3 55
†*Alongside in N.Y. Harbor.*						
Hard White Ash	4 10	4 10	4 10	4 10	4 40	3 80
Free-burning W. Ash	.....	.....	3 80	3 95	4 40	3 80
Schuylkill Red Ash	.....	.....	.....	4 35	4 50	3 90
Lorberry	.....	.....	.....	4 60	4 60	4 25
Lykens Valley Vein	.....	.....	4 60	4 70	4 70	4 35

* Fifty cents per ton additional for delivery in New York.

† On coal delivered f. o. b. at the Philadelphia and Reading Coal and Iron Co.'s Wharf at Williamsburgh, the current date of harbor freight will be allowed from the prices here given.

Wholesale Prices of Bituminous Coal.

DOMESTIC GAS COALS.

Per ton of 2240 lb.	At the Shipping Ports.	Alongside in New York.
Westmoreland and Penn	$4 25	.....
At Greenwich, Philadelphia	.....	$5 50
At S. Amboy	5 00	5 50
Kanawha at Richmond	4 10	5 40
Red Bank Cannel, Pa., at Philadelphia	8 00	8 50
Youghiogheny, Waverly Co., at Balt	4 00	5 65
Despard, West Va	4 50	6 00
Murphy Run, West Va., at Baltimore	3 75	5 85
Fairmount, West Va., " "	3 75	5 70
Newburg Orrel. Md. " "	3 75	6 00
Cannelton Cannel, West Va	.....	10 00
" Splint " at Richmond	6 00	7 00
" Gas Coal at Richmond	4 00	5 65
Peytona Cannel, W. Va., at Richmond	.....	10 00

MANUFACTURING AND STEAM COALS.

Cumberland at Georgetown and Alexandria	2 75@2 90	4 35@4 50
Cumberland, at Baltimore	2 90@3 00	4 35@4 50
Cl'rfi'd "Eureka" and "Franklin."		
At mines	0 75	.....
At Baltimore	3 25	4 50
At Philadelphia	3 25	4 50

FOREIGN GAS COALS.

	Sterling.	Am. cur'ncy
Newcastle, at Newcastle-on Tyne	7s.6d.	$2 50@ $3 50
Liv. House Orrel, at Liv.	25s.	13 00
Ince Hall Cannel "	35s.6d.	18 00
" Gas Cannel "	25s.6d.	10 00@ 10 50
Scotch Gas Cannel, at Glasgow, nominal	25s.	7 50
	Gold.	
Bl'k House, at Cow Bay, N.S.	$1 75	$4 50
Caledonia, at Pt. Caledonia.	1 50	4 25
Glace Bay at Glace Bay	1 50	4 00
Lingan, at Lingan Bay	1 50	.....
Intern'l Mines, at Sydney	1 75	4 50
Pictou, Vale Mines, at Pictou	2 00	4 70

Retail Prices.

Per ton of 2000 lbs,

Anthracite.

	G. & Egg.	Stove	Chest'
Pittston coal delivered	$5 00	$5 00	$5 00
Lack. coal, delivered below 59th St.	4 50	4 75	4 50

Bituminous.

Liv. House Orrel	$18 00	American Orrel	$11 00
Liv. House Cannel	18 00	Red Bank Cannel	7 00
Am. "	11 00	Cumberland	9 00
Ca'n'lt'n Bl'k, or splint.	10 00		

Baltimore. August 14, 1878.

[Specially reported.]

Wholesale Prices per ton of 2240 lbs.

In cars at Depot N. C. R. R.

HARD WHITE ASH, FREE-BURNING WHITE ASH, SHAMOKIN, ETC.

Lump and Steamboat	$3.85	Stove	$4.25
Broken	3.85	Chestnut	3.80
Egg	4.00		

LYKENS VALLEY RED ASH.

Broken	$4.15	Stove	$4.45
Egg	4.30	Chestnut	3.90

From wharf or yard to the trade, 50c. per ton additional.

Afloat by cargo per canal barge, 15c. per ton less than in cars at depot.

Boston. August 10, 1878.

Anthracite, broken	$4.55	Caledonia	$4.00
" egg	4.60	Newcastle	4.00
" stove	5.00	Cannel, English	18.00
Franklin	5.75	" Library	15.00
Cumberland	4.50	" Buckeye	11.00
Clearfield	4 50	Penn	5.25
Westmoreland	5.25	Youghiogheny	5.25

—*Commercial Bulletin*

Buffalo. August 12, 1878.

[Specially reported by E. L. HEDSTROM.]

Until further notice, the following will be the prices for Scranton, Wyoming, Lehigh, and Blossburg coals, per ton of 2000 pounds, delivered free on board vessels at Buffalo N. Y.:

	Lump.	Grate.	Egg.	Stove.	Nut.
Scranton	....	$4.30	$4.40	$4.65	$4.15
Wyoming	....	4.30	4.40	4.65	4.15
Lehigh (Sugar Loaf)	....	....	....	....	....

Blossburg, $3.75, F. O. B.

[Specially reported by C. M. UNDERHILL.]

	DELIVERED AT			
	Elmira.	Ithaca.	Syracuse	Rochester.
	Afloat.	Afloat.	Afloat.	Afloat.
Lump	.....	.....	.....	.....
Grate	$3.50	$3.35	$3.35	$3.60
Egg	3.60	3.45	3.45	3.70
Stove	3.70	3.70	3.70	3.95
Nut	3.60	3.60	3.35	3.60

	DELIVERED AT				
	Oswego.	Erie.	Buffalo.		
	F. O. B.	F. O. B.	Afloat.	F. O. B.	Ret. Del.
Lump	.....	.....	.....	.....	.....
Grate	$3.80	$4.30	$3.90	$4.30	$4.90
Egg	3.90	4.40	4.00	4.40	5.00
Stove	4.15	4.65	4.25	4.65	5.25
Nut	3.65	4.15	3.75	4.15	4.75

Cost of coal from Erie, Oswego, Sodus Point or Charlotte for Western market, same as if shipped from Buffalo.

[Specially reported by LEE & LOOMIS.]

Per ton of 2000 lbs. delivered on cars.

	Lump.	Run of Mine.	Nut.	Slack.
Connellsville coke	$4.75	.....	.....	.....
Brookfield Coal	3.50	.....	.....	.....
Briar Hill	3.50	.....	2.85	.....
" " No. 2	.....	3.15	.....	.....
Youghiogheny	4.00	.....	.....	.....
Monterey	3.00	2.60	.....	.....
Catfish	3.00	2.60	.....	1.70
Stoneboro	.....	2.60	2.50	1.70
Sterling Cannel	4.50	.....	.....	.....
Cameron	.....	2.80	.....	.....
Hillside	.....	.....	.....	.....

Chicago, Ill. August 12, 1878.

[Specially reported by Messrs. RENO & LITTLE.]

The following are the present prices of coal per ton of 2000 lbs. delivered:

Retail prices of coal delivered per ton of 2000 lbs

Lackawanna Stove	$6.25	Erie and Brier Hill	$5.00
" Chestnut	6.00	Wilm'gton & Ill.	$3 00@3.50
" Grate	6.00	Blossburg	5.50@6.00
" Egg	6.00	Piedmont	7.00

Stocks of all kinds of coal liberal. Trade dull.

Cincinnati, O. August 13, 1878.

[Specially reported by the Consolidated Coal & Mining Co.]

Per bushel of 72 lbs.

	Retail delivered.	Wholesale afloat.
Youghioghney	11c.	7½c.
Camden	9c.	5½c
Cannel	17@18c.	13c.

Anthracite, delivered, $7@$8 per ton of 2,000 lbs.

Cleveland, O. August 13, 1878.

Coal freights to Chicago and Milwaukee are improving, and range from 35 to 40c.

Evanston, Ill., has opened a wholesale coal trade by the lake, and the prospect is that the trade will grow steadily, the harbor now having facilities for the discharging of large vessels.

The Chicago Seaman's Union met in the hall on Wednesday evening, August 14, to discuss the question of wages. Many members expressed their opinion, that, as the seamen had dealt fairly with owners when freights were down, now, that the heavy fall weather was approaching and freights advancing, the owners ought to make an advance on the present figure. What the result of this meeting will be can not at present be determined, but the indications are that the present rate will be advanced to $1.50 at least.

[Specially reported by F. A. BATES, Esq.]

Per ton of 2000 lbs. f.o.b. vessels.

WHOLESALE.

Brier Hill (Church Hill)	$3.25
" " No. 2 Grades	3 00@3.15
Monday Creek	2.60
Straitsville Lower Vein	2.60
Hocking Valley	2.60
Massillon (No. 2 grades 15 cents less)	2.60
Tuscarawas Valley	2.25
Columbiana	2.25
Nut coal, various grades	1.70@2.00
Screenings " "	1.25@1.50
Youghiogheny gas coals	3 60

RETAIL TRADE.

	1 ton.	10 tons.
Brier Hill lump	$4 00	3 75
Massillon and Mineral Ridge lump	3 75	3 50
" " " " nut	3 50	3 25
Straitsville Lower Vein and Hocking lump.	3 60	3 35
" " " nut	3 40	3 15
Rich Hill lump	3 50	3 35
" " nut	3 25	3 00
Columbiana, lump	3 00	2 75
" nut	2 50	2 35
Lacka'a., Wilkes-Barre and Pittston egg and grate	5 50	5 25
Lackawanna, Wilkes-Barre and Pittston stove	5 85	5 60
" " " chestnut	5 25	5 00

Lehigh $1 per ton higher.

Hamilton, Ont. August 13, 1878.

[Specially reported by H. BARNARD.]

Retail prices delivered per ton of 2000 lbs.

Scr. or Wilkes-B. Grate	$4.75	Lehigh Lump	$6.00
" " Egg	4.75	Brier Hill	5.00
" " Stove	5.25	Massillon	4.50
" " Nut	4.75	Smithing	5.50

Indianapolis, Ind. August 13, 1878.

[Specially reported by Messrs. COBB & BRANHAM.]

WHOLESALE BITUMINOUS.

On board cars, per ton of 2000 lbs.

White River	None in market	Hocking Valley	4.20
Brazil Block	$2.10	Raymond City	3.40
Highland Grate	1.85	Youghiogheny	3.70
Indiana Cannel	3.65	Blossburg (smithing)	5.25
Peytona	5.70	Piedmont "	5.25

Per car, 12 tons.

Block coal, nut	$15.00	Block Slack	$12.00
Highland, "	14.00		

RETAIL BITUMINOUS.

Delivered per bushel of 70 lbs.

Raymond City	14c.	Block Nut, steam use	6c.
Brazil Block	10	" Slack, "	5
Highland Grate	9	Virginia Cannel	24
Block Nut, domestic use	10	Indiana Cannel	15
Highland Nut, " "	11	Youghiogheny	15
" " steam	8	Blossburg	24

GAS COKE.

Per bushel, measure containing 2888 cubic inches.

Retail, crushed	8c.	Wholesale, lump	6½c.
" lump	7	" crushed	7½

ANTHRACITE.

Per ton of 2000 lbs.

Wholesale on Cars.		*Retail delivered.*	
Wilkes-Barre, all sizes.	$5 50	Wilkes-Barre, all sizes.	$6.50
Lackawanna, "	5.75	Lackawanna, "	6.50
Lehigh "	6.75	Lehigh, "	7.50

Louisville, Ky. August 13, 1878.

[Specially reported by Messrs. BYRNES & SPEED.]

Wholesale per bushel of 72 lbs.

Pittsburg	8c.	Raymond City	7c.
Ashland (Ky.)	6	Kentucky, on cars	7

Retail.

Pittsburg	11c.	City made Coke, per bsh	7c.
Raymond City	10	Soft Coke, per bushel	7c.
Ashland (Ky.)	9	Cannel Coal	17
Pittsburg Nut	10	Anthracite, per ton	$7 50

Milwaukee, Wis. August 13, 1878.

[Specially reported by Messrs. R. P. ELMORE & Co.]

Retail price per ton of 2000 lbs.

Anthracite, Egg, and Chestnut	$5 50		
Stove size	6 50		
Lehigh lump	$6 50	Connellsville coke on	
Brier Hill	5 00	R. R. track	7 25
		Straitsville	4 80

Montreal. August 13, 1878.

[Specially reported by Messrs. ROBERT C. ADAMS & Co.]

Wholesale per 2240 lbs.

Scotch Steam	$4.00	Cape Breton Steam	$3.25
Pictou	3.60	Newcastle Smith's	5.00

Anthracite at retail, per 2000 lbs. delivered.

Stove	$6.00	Chestnut	$5.25
Egg	5.50		

New Orleans, La. August 8, 1878.

[Specially reported by Messrs. C. A. MILTENBERGER & Co.

PITTSBURG COAL.

At wholesale (by boat-load)	27c	per bbl. of 180 lbs.	
To steamboats	45c.	"	"
" manufactories	45c.	"	"
" families	50c.	"	"

In hhds. (for shipment) $5.00 per hhd. from 5 to 6 bbls.

ANTHRACITE COAL

Per ton of 2000 lbs.

At wholesale	$7.00 to $8.00
To families etc	9 00 to 10.00

ST. BERNARD (KY.) COAL.

To steamboats	40c.	per bbl. of 180 lbs.	
" families	45c.	"	"
Virginia cannel to families	$1.00	"	"

Pittsburg. August 15, 1878.

COAL.—All the departments of this business are nearly at a standstill. The navigation is stopped by low water; but little work is doing in the mines; the lower markets are overstocked; prices are very low, scarcely remunerative; the present is the dullest season of the year; there is no incentive to activity; not much will be done until cooler weather and the opening of fall business. Coa

operations in West Virginia have wrested the control of the markets below from the Pittsburg dealers. The deposits there are so extensive and abundant, that the shorter transportation from the mouth of the Kanawha confers an advantage in the fixing of prices which can not be overcome except by compromise. A contest for the business is like the strifes of the railroads, injurious to both parties. An agreement upon fair rates, to be observed by the dealers of both regions, is the most rational course, and, it is probable, will ultimately be adopted, after feeling a while the depleting effects of a reckless rivalry. The discharged coal vessels have nearly all been returned, affording the conveniences needed for receiving coal at the mines; still, not half of the collieries are being worked at present. There has been no discontent with wages, 2 cents a bushel, manifested of late among the miners, who, in this dull season of low prices, are only too glad of work even at that rate. We give quotations below—they are without change:

Wholesale, on board...	4 cts. per bush.	$1.06 per ton.
Retail, delivered.....	6½ cts.	"	1.71 "

Bushels are rated among dealers here at 76 lbs.—26½ bushels make a ton nearly.

The barrel that rules the coal measurement in New Orleans contains 2 4-7 bushels, of 80 lbs. each, making about 206 lbs. Nine and two thirds of these barrels weigh a ton within a small fraction.

COKE.—No change in this trade—production and consumption are adjusted to a perfect level, without fluctuation. About 1,200,000 bushels is the weekly quantity. Prices are unchanged. We give quotations at home rates, in which 40 lbs. make a bushel, and 50 bushels a ton:

Wholesale, per bushel,	4@4½c.; per ton.....	$2.00@2.25
Retail, "	5@5½c.; "	2.50@2.75

The price at other points where the Connellsville coke goes are the same as here, with the transportation added.

Tons in the above tables are of 2000 pounds.—*American Manufacturer.*

Pittston, Pa. August 13, 1878.

Pennsylvania Coal Company's Coal in Yard.

Retail per ton of 2,000 lb.

Lump, Egg, and Stove	$2 25
Chestnut.....	2 00
Pea	1 00

Delivered, 50 cents per ton additional.

Richmond, Va. August 13, 1878.

[Specially reported by S. H. HAWES, Dealer in Coal.]

Per ton of 2240 lbs. f.o.b.

Kanawha Cannel.....	$9.00	New River Bituminous	$3.30
Coalburg Splint	4.50	Clover Hill Coal..	2.50
Lewiston "	4.50	Norwood Gas and Steam Coal.....	2.70
Kanawha Gas Coal.. .	4.10		

San Francisco. August 8, 1878.

COAL.—Imports from January 1st to August 1st, 1878:

	Tons.		Tons.
Anthracite.....	7,578	Seattle.....	52,626
Australian.....	49,860	English.....	16,716
Coos Bay	19,050	Mt. Diablo....	65,401
Cumberland.....	802	Rocky Mountain.....	371
Bellingham Bay.....	2,620	Ione.....	621
Vancouver Island....	84,830	Carbondale.....	2,024

The receipts during the week have been very liber l, both from home and abroad. Several cargoes of Wallsend have been sold on the spot, one at an advance of 37½c. ₱ ton upon like previous sales—say $6.25. Imports since August 1st embrace the following: Gutenburg, from Greenock, 396 tons; Corolla, from Newcastle, N. S. W., 1000 tons; Lizzie Williams, from Seattle, 1394 tons; J. B. Bell, from same, 1200 tons; Coloma, from Newcastle, N. S. W., 1200 tons; Gryfe, 1600 tons Sydney; Cedric the Saxon, 2295 tons do.; bark Dunkeld, 1446 tons Newcastle, N. S.W.; Mary Glover, 1200 tons Seattle; Free Trade, 300 tons from Unga Island, A. T. It is a significant fact that all the Seattle and Nanaimo coals are sold promptly upon arrival, and go immediately into consumption. The cargo price is supposed to be at or about $6. We note the following additional arrivals: The Bruce, from Newcastle, N. S. W., with 1602 tons; Northbrook, from Sydney, with 2500 tons; British ship Houghton Tower, from Newcastle, N. S. W., 2080 tons; British bark Mallagate, from same, with 1506 tons; Beemah, from same, with 1830 tons; John Patterson, from same, with 1830 tons—leaving the market at the close flat.

Sandusky, Ohio. August 13, 1878.

[Specially reported by Messrs. BLACK & CLARKE, Agents Con. Coal and Mining Company.]

Per ton of 2000 lbs.

ANTHRACITE.

	Grate.	Egg.	Stove.	Chest
Lehigh.....	$6 00	$6 00	$6 25	$5 75
Wilkes-Barre.....	4 80	4 90	5 15	4 65
Pittston.....	4 80	4 90	5 15	4 65

BITUMINOUS.

Massillon.....	$2 85	Straitsville.....	$2 50
Hocking Valley	2 50	Piedmont.....	4 10

Prices retailed delivered 50c.@75c. above car prices.

St. Louis, Mo. August 13, 1878.

Reported by JAMES J. SYLVESTER, Secretary of the Anthracite Coal Association.]

Retail prices, delivered. Ton of 2000 lbs.

ANTHRACITE.

	Per ton.		Per ton.
Lackawanna....	$7.50@.....	Lehigh.....	$8.50@.....
Wilkes-Barre...	7.50@.....	Connells. Coke.	6.00@.....
Schuylkill.....	7.50@.....	Blossburg.....	7.75@.....

August 13, 1878.

[Specially reported by Messrs. LEWIS P. HARVEY & Co.]

BITUMINOUS.

Big Muddy....	$3.65	Piedmont.....	$7.25
Indiana Block.	3.25	Pittsburg.....	4.35
Illinois Coals..	2.25@2.50	Peytona	7.50
Blossburg.. ..	7.75	Lehigh Val. Ant..	7.50@8.00

Toledo, Ohio. August 13, 1878.

[Specially reported by Messrs. GOSLINE & BARBOUR.]

We quote the following prices for coal on cars at Toledo:

Ton of 2000 lbs.

	Grate.	Egg.	Chestnut.	Stove
Pittston.....	$4 80	$4 90	$4 65	$5 15
Wilkes-Barre	4 80	4 90	4 65	5 15
Lackawanna.....	4 80	4 90	4 65	5 15

Lehigh lump, $5.75.

Ton of 2000 lbs.

Straitsville lump.....	$2 60	Massillon nut..	$2 40
" nut.....	2 25	Willow Bank lump....	2 85
Shawnee lump	2 60	" nut.....	2 40
" nut.....	2 25	Cumberland	5 00
Hocking Valley lump.	2 60	Blossburg.....	4 60
" nut..	2 25	Morris Run.....	4 60
Massillon lump	2 85	Gas Coal.....	3 30

Retail prices, delivered in the city, are: Stove, $5.25; Grate, Egg, and Chestnut, $5.

FREIGHTS.

Coastwise Freights.

Per ton of 2240 lbs.

Representing the latest actual charters to August 16, 1878.

PORTS.	From Philadelphia.	From Baltimore.	From Elizabethport, Port Johnson, South Amboy, Hoboken and Weehawken.
Alexandria, Va..	.....	.....	.....
Bangor, Me.....	.....	.....	75
Bath, Me.....	.....	1.25	75
Baltimore.....	40†	.....	.....
Beverly, Mass....	.....	.....	80
Boston, Mass.....	1.10@1.12½	1.25@1.30	75
Bridgeport, Conn.	90	1.25	50
Bristol, R. I.....	1.15	.....	70
Brooklyn.....	.....	.....	.....
Cambridge, Mass.	.....	.....	75
Cambridgeport ..	1.22½@1.25	.....	.....
Charleston	.....	.....	.....
Charlestown.....	1.10	.....	75
Chelsea.....	1.15	.....	.....
Danversport	1.10	.....	.....
East Cambridge.	1.12½	.....	75
Fall River.....	.....	1.25	70
Georgetown, D.C.	.....	.....	.....
Hartford.....	1.35	.....	.....
Higham.....	1.25†	.....	.....
Hoboken.....	.....	.....	35
Jersey City.....	.....	.....	35
Lynn	.....	.....	75
Marblehead.....	.....	.....	.....
Middletown.....	.....	.....	90
Nantucket, Mass.	.....	.....	90
New Bedford	1.10	1.25	70
Newburyport	1.20	1.40	90
New Haven.....	85@90†	1.25	50
New London.....	1.10	1.25	60
Newport.....	1.05	.....	70
New York.....	80@85	1.20	35
Norfolk, Va.....	40	.....	.....
Norwich.....	1.20	.....	70
Norwalk, Conn ..	.....	.....	55
Pawtucket.....	1.15	.....	75
Philadelphia....	.....	.....	.....
Plymouth.....	1.25@1.27½	.....	.....
Portland.....	.....	1.25	75
Portsmouth, N.H.	.....	1.40	85
Portsmouth, Va..	50@55	.....	.....
Providence.....	1.05	1.25	70
Quincy Point.....	1.15	.....	80
Richmond, Va ...	50@55	.....	.....
Rockland.....	95†	.....	80
Rockport.....	1.25	.....	.....
Saco.....	.....	.....	100
Salem, Mass.....	1.25	1.25	75
Saugus.....	.....	.....	.....
Saybrook.....	.....	.....	.....
Savannah.....	.....	.....	.....
Somerset.....	1.05	.....	70
Staten Island....	.....	.....	20
St. Johns, N. F...	.....	.....	.....
Washington.....	50	.....	.....
Williamsburg.....	.....	.....	35

*And discharging and towing. † And discharging. ‡ And towing. § 3c. per bridge extra.

Rates of Freight on Anthracite Coal to Tide-Water Ports.

SCHUYLKILL COALS. Per ton of 2,240 lb.	From *Pine Grove.	From *Tamaqua.	From *Schuylkill Haven.	From Port Clinton.
To *Port Richmond*, via P. & R. R. R., Main Line, for shipment.....	1.95	1.90	1.75	.....
To *Harrisburg*, via Lebanon Valley Branch.....	1.29	1.85	1.70	.....
To *Allentown*, via East Pennsylvania Branch	1.59	1.74	1.59	.....
To *Lancaster*, and Points on Lancaster Branch, via R. & C. R. R.	1.71	1.66	1.51	.....
To *Dauphin*, via Schuylkill and Susquehanna Branch.....	1.09	1.52	1.37	.....
To *Slatedale Junction*, via Berks and Lehigh ranch.....	1.74	1.69	1.54	.....
To *Lebanon*, via Lebanon and Tremont Branch.....	98	.....	.....	.....
To *Philadelphia*, via Schuylkill Canal, including freight and charges for the use of cars and barges, and for tolls (exclusive of cost of loading, trimming and unloading).....	.....	.....	1.65	1.55
To *New York*, via Schuylkill Canal, including freight and charges for the use of cars and barges and tolls on the Schuylkill Canal and Delaware & Raritan Canal and the towing between Fairmount and Bordentown and between New Brunswick and New York (exclusive of cost of loading, trimming and unloading).....	.....	.....	2 50	2.40

From *Tamanend*† to *Catawissa, McAuley, Mainville, Rupert* and *Danville*, via Catawissa & Williamsport Branch Railroad..... 100

From *Tamanend*† to *Williamsport, Hall's* and *Montoursville*, via Catawissa & Williamsport Branch Railroad..... 135

*For shipment via Main Road or Schuylkill Canal, one and one-half cents per ton per mile, and two cents per ton additional to Schuylkill Haven, Pine Grove, Tamaqua or Port Clinton, for Canal, as the case may be. Provided no charge shall be less that 15 cents, or greater than 45 cents per ton

† Coal sent to points on the Catawissa and Williamsport branch will be charged one and one half cents per ton per mile, and two cents per ton additional to Tamanend.

A deduction of 20 per cent will be made from the above rates upon all coal consigned for actual consumption at iron works upon the line of the railroad, any of its branches, or the Schuylkill Canal.

An additional charge of 25 cents per ton will be made on chestnut and pea coal to whatever points consigned. If the shipper signs a release of all demands arising from a deficiency of weight at the place of destination, and agrees to indemnify the company from all claims by reason thereof, such additional charge will not be made. Releases, properly prepared, will be furnished, and can be signed at the coal offices of the company, at St. Clair, Palo Alto, Schuylkill Haven, Mount Carbon, Pine Grove, and Tamaqua.

For consumption at local points in coal region, including Shamokin, Herndon, Schuylkill Haven, Pine Grove, and Tamaqua, three cents per ton per mile, and two cents per ton additional; and a charge for *car service* of fifteen cents per ton when in Philadelphia and Reading Railroad cars, provided no charge, including freight tolls and car service, shall be less than twenty-five cents per ton. If the coal is for manufacturers, the rate will be two cents per ton per mile, and two cents per ton additional; and a charge for car service of five cents per ton when in Philadelphia and Reading Railroad cars. Provided no charge, including freight, tolls, and car service, shall be less than fifteen cents per ton.

Sent westward via Northern Central Railway (in N. C. R W. Co.'s cars), four and two tenths cents per ton per mile, to Locust Gap, Shamokin, or Herndon, provided no charge will be made less than fifteen cents per ton.

One mile extra will be added for coal passing through the East Mahanoy Tunnel.

Fractions of distances and rates will always be stated in *tenths*.

No charge will be made for weighing or making returns of coal shipped, and the latter will be furnished free of charge upon application to the weighmaster; if these returns are to be sent by mail, envelopes properly stamped and addressed, must be furnished to the weighmasters.

All coal will be charged the rates (both lateral and main line) current on the day it is weighed; it will also be waybilled on the same day.

Lake Freights on Coal and Iron Ore.

Representing the latest actual charters up to August 14th,

From	To	Rate per ton.	From	To	Rate per ton.
Ashtabula.	Milwauk'e.	30	Cleveland .	Milwaukee	40
"	Chicago...	35	"	Brockville.	$1.00
"	Toronto. ..	80	"	Milwaukee	40
Bay City..	Chicago*..	60	Erie.....	Chicago ...	40
Black Riv..	Chicago...	40	Escanaba	Cleveland*	60
"	Milwaukee	40	Fairport...	Toronto. ..	85
"	Toronto. ..	85	"	Toledo*....	60
Buffalo	Chicago...	30	Marquette	Chicago...	1.20
"	Cleveland*	40	"	Cleveland*	1.00
"	Detroit	15	"	Ashtabl'a*	1.00
Charlotte..	Chicago. ..	80	Oswego ...	Chicago...	80
"	Milwaukee	65	"	Milwaukee	86
Cleveland .	Toronto...	80	"	Detroit. ...	45
"	Chicago...	35	Sandusky..	Toronto. ..	90

* Iron ore.

Ocean Freights.

Ocean Freights on coal, iron, etc., per ton of 2000 lbs., to and from foreign and domestic ports, for four weeks, ending August 15, 1878, are given below.

DATE.	From	To	Cargo.	R'te
July 14	Philadelphia.....	Yarmouth, N.S.	Coal....	1.40
" 14	Glace Bay.....	Havana.....	Coal...	3.50
" 18	New York.....	St. Johns, N. B.	Coal....	2.60
" 23	Perth Amboy.... ...	St. Johns, N. B.	Coal....	1.00
" 27	New York.....	Halifax, N. S..	Coal....	1.50
" 31	Philadelphia.....	St. Thomas.....	Coal....	3.50
" 31	New York.....	Nassau.	Coal....	2.00
Aug. 6	Baltimore.....	Aspinwall.....	Coal....	5.00
" 7	Philadelphia.....	Cienfuegos.....	Coal....	5.87
" 7	Bilboa.....	Philadelphia..	Iron ore	2.45
" 13	Hoboken..	Charlottetown .	Coal....	1.50

IRON MARKET REVIEW.

NEW YORK, Friday Evening, Aug. 16, 1878.

American Pig.—There is only a small business being reported, with no indication of an improved demand. Some of the prominent Lehigh companies are firm in their prices, and, as a consequence, are stocking iron. Either prices must decline still more or more furnaces must go out of blast. We quote No. 1 foundry at $16@$18; No. 2 foundry at $15@$17, and forge, $14.50@$16.

Scotch Pig.—The business of the past week has been more quiet than preceding weeks. We quote Eglinton at $21.50@22; Coltness, $23@$24; Glengarnock, $23.

According to Messrs. John E. Swann & Bros., of Glasgow, there were in blast, August 2d, 96 furnaces, against 107 a year previous. The stock of pig-iron in Connal & Co.'s stores was steadily increasing, being 168,060 tons, against 110,706 tons at the corresponding time in 1877. Shipments showed a falling off for like periods of 42,856 tons, as compared with last

year, while the imports had increased 5950 tons. Quotations for No. 1 iron were: Gartsherrie, 57s.; Coltness, 60s.; Summerlee, 54s.; Langloan, 57s.; Glengarnock, 55s., and Eglinton, 50s. The average price of warrants during July was 49s. 11d., as compared with 54s. 5½d. during July, 1877.

Rails.—Sales aggregating 2000 tons of steel rails for Western delivery are reported, also sales of iron rails amounting to 2000 tons. We quote iron rails at mills at $32@$36, and steel at $41.50@$44.

Old Rails.—Without business we quote nominally at $17.50@$18.50.

Wrought Scrap.—The quotation for No. 1 wrought scrap is nominally $20@$21, with no business doing.

Baltimore. August 12, 1878.

[Specially reported by Messrs. R. C. HOFFMAN & Co.]

Having no material change to report in the iron market for past week, we continue last quotations, viz.:

Balt. Char.	$26.00@$28.00	M. & White	$13.00@$14.00
Va. "	26.00@ 28.00	C'lC.B.Blooms	50.00@ 52.00
Anth.No.1	19.00@ 20.00	Billetts	52.00@ 55.00
" " 2	18.00@ 19.00	Refi'd Blooms	43.00@ 45.00
" " 3	16.00@ 17.00		

Buffalo. August 13, 1878.

[Specially reported by Messrs. PALEN & BURNS.]

	4 mos
No. 1 Foundry	$17.50
No. 2 "	16.50
Mill	15.00
Silver Gray	16.00
American Scotch A 1	18.00
" " B 1	17.00
" " No. 2	16.50

Chattanooga. August 13, 1878.

[Specially reported by J. F. JAMES, Dealer in Iron & Metals.]

Tenn., Ala. & Ga. Charcoal, No. 1 Foundry	$16 00@$17 00		
Tenn., Ala. & Ga. Charcoal, No. 2 Foundry	15 00@ 16 00		
Tenn., Ala. & Ga. Charcoal, Gray Forge	13 00@ 15 00		
Tenn., Ala. & Ga. Coke, No. 1 Foundry	18 00@ 19 00		
Tenn., Ala. & Ga. Coke, No. 2 Foundry	16 00@ 17 00		
Tenn., Ala. & Ga. Coke, Gray Forge	14 00@ 15 00		
Charcoal or Coke, white and mottled	13 00@		
Old rails	$18 00@$19 00	Wr'ght scrap, No. 2	$11 00
Old car wh'ls	16 00@ 17 00	Cast scrap	10 00
Wr'ght scrap, No. 1	16 00	Muck bar	30 00@ 32 00

IRON ORES.

Red hematite or fossiliferous f. o. c. at mines, about 55 per cent metallic iron $1.25
Brown hematite about 55 per cent metallic iron 1.75

Cincinnati, O. August 13, 1878.

[Specially reported by Messrs. TRABER & AUBERY, Commission Merchants for the sale of pig iron, blooms, ore, etc.]

Below please find closing quotations of our pig-iron market, viz.:

CHARCOAL.

H'n'g Rock	No. 1 Foundry & B 1	$21 00@$22 50—4 mos.
"	No. 2 "	20 00@ 21 00—4 mos.
"	Soft Silver Gray	19 00@ 20 00—4 mos.
"	Mill	18 00@ 19 00—4 mos.
Tennessee	No. 1 Foundry	20 00@ 21 00—4 mos.
"	No. 2 "	19 00@ 20 00—4 mos.
"	Mill	18 00@ 19 00—4 mos.

STONE COAL.

Ohio	No. 1 Foundry	$17 00@ —4 mos.
"	No. 2 "	16 00@ —4 mos.
"	No. 3 "	15 00@ —4 mos.
"	No. 4 "	14 00@ —4 mos.
"	Mill	16 00@ —4 mos.

COKE.

Ohio & W. Va.	No. 1 Foundry	18 00@ 19 00—4 mos.
" "	No. 2 "	17 00@ —4 mos.
" "	Stove	16 00@ —4 mos.
" "	Mill	17 00@ —4 mos.

CAR-WHEEL.

H'n'g R., C. B	Hecla, Vesuvius, Etna, Buckhorn, Jefferson.	$30 00@ 35 00—4 mos.
Maryland,	"Cedar Point"	35 00@ —4 mos
Missouri,	"Maramec"	28 00@ —4 mos

BLOOMS.

Charcoal ..... $45 00@$50 00 cash.

SCRAP IRON.

Cast ..... 40c. @ 45c.—cash.
Wrought ..... 62½c.@ $1.00—cash

Columbus, Ohio. August 13, 1878.

[Specially reported by Messrs. KING, GILBERT & WARNER, Dealers in Pig Iron and Ores.]

The usual time, four months, allowed on quotations.

FOUNDRY IRONS.

No. 1 Hanging Rock Charcoal	$22 00@$22 50
No. 2 " " "	@
No. 1 Hocking Valley soft and strong from pure limestone ores	18 00@ 18 50
No. 2 Hocking Valley soft and strong from pure limestone ores	17 00@ 17 50
No. 1 American Scotch	18 00@ 18 50
No. 1 Moxahala	18 00@ 18 50
No. 2 "	17 00@ 17 50
No. 1 Shawnee	18 00@ 18 50
No. 1 Eliza (Jackson County)	18 00@ 18 50
Silver Gray	16 50@ 17 00

MILL IRONS.

Gray neutral	16 00@ 17 00
Mottled and white neutral	15 50@ 16 00
Gray cold short	16 00@ 16 50
Mottled and white cold short	15 00@ 15 50

Cleveland, O. August 13, 1878.

[Specially reported by Messrs. C. E. BINGHAM & Co.]

Per gross ton, on four months' time. Subject to change without notice.

FOUNDRY IRON.

No. 1 L. S. Charcoal	$24 00	Am. S., No. 1, Ch. Val	$22 00
No. 2 " "	24 00	" " B—1, " "	21 00
No. 1 Anthracite	21 00	" " No. 2 " "	19 00
No. 2 "	19 00	No. 1, Massillon	22 00
No. 1 Bituminous	21 00	B—1, "	21 00
No. 2 "	19 00	No. 2, "	20 00

CAR-WHEEL AND MALLEABLE IRON.

No. 3, L. S. Charcoal	$25 00	Nos. 5 & 6, L. S. Char.	$25 00
No 4, " "	25 00		

BESSEMER IRON.

Nos. 1 & 2, L. S. Char. $24 00

FORGE IRON.

No. 1, Gray ..... $18 00 | White and Mottled $17 00

Iron Ores.

Red Hematite (about 55 per cent. metallic iron) f. o. c. at mines $1 25
Brown Hematite (about 55 per cent. metallic iron) 1 75

Louisville, Ky. August 13, 1878.

[Specially reported by Messrs. GEORGE H. HULL & Co.]

The demand for iron still seems on the increase, but with no disposition on the part of buyers to lay in large stocks. Some furnaces are asking an advance on prices current thirty days ago on their produce, but, in general, the same figures rule.

The usual time, 4 months, allowed on quotations below:

FOUNDRY IRONS.

	No. 1.	No. 2.
Hanging Rock Charcoal	$20 00@$21 00	$18 00@$19 00
Southern Charcoal	18 00@ 19 00	16 00@ 17 00
H'n'g Rock, Stc'l & Coke	19 00@ 20 00	17 00@ 18 00
Southern Stonecoal & Coke	17 00@ 18 00	16 00@ 17 00

"Amer. Scotch" ... $17@$19 | Silver Gray ... $15@$17.00

MILL IRONS.

No. 1 Charcoal, Cold-short & Neutral	$16 00@$16 50
No. 1 Stc'l & Coke, Cold-short & Neutral	16 00@ 16 50
No. 2 Stc'l & Coke, Cold-short & Neutral	15 50@ 16 00
No. 1 Missouri and Indiana, Red-short	20 00@ 21 00
White & Mottled, Cold-short & Neutral	13 00@ 14 00

CAR-WHEEL AND MALLEABLE IRONS.

Hanging Rock, Cold Blast	$28 00@$30 00
Alabama and Georgia, Cold Blast	26 00@ 28 00
Kentucky, Cold Blast	24 00@ 26 00

Milwaukee, Wis. August 13, 1878.

[Specially reported by Messrs. R. P. ELMORE & Co.]

CHARCOAL IRON.

No. 1 Lake Superior per gross ton	$23 00—4 mos.
" 2 " " "	22 00—4 mos.

ANTHRACITE IRON.

No. 1 Anthracite per gross ton	23 00—4 mos.
" 2 " " "	22 00—4 mos.

STONE COAL AND COKE.

Warner's Am Sc'th (Bk. Band, per ton	$24 00@ —4 mos.
Soft Silvery per ton	21 00@ —4 mos.
Ohio Stone Coal	22 00@ —4 mos.

CAR WHEEL.

Lake Superior ores per ton ..... $24 00@25 00—4 mos

Philadelphia. August 15, 1878.

[Specially reported by JUSTICE COX, JR., & Co., Iron Merchants, 333 Walnut street, Philadelphia.]

Pig Iron.—There is little new to report. The market continues dull and depressed, and few large sales are reported. Four more furnaces on the Schuylkill are blowing out this week. Thus every week we hear reports of companies who think it more profitable to be out than in at prices ruling. We quote No. 1, $17 to $18.50; No. 2, $16 to $17; Gray Forge, $15 to $17, as to brand.

Manufactured Iron.—The demand for bars is light, while plate and tank about hold their own; most plate mills having about all they can do for the present without any thing to look forward to. There is some inquiry for skelp, but low prices are the rule, so many mills are declining to bid. We quote bars at 1 7-10 to 2c., as to quality; plate and tank, 2⅛ to 6c. per ℔.; skelp, 1 9-10 to 2 1-10c.

Rails.—There is nothing new to report in steel rails; some think the market weak, but as most mills have about all they can do for the present, they do not seek much for orders. In iron rails the mills are fairly busy, but will accept very low prices for prompt cash. We quote steel $42 to $44, and iron $32 to $35 at mill.

Old Rails.—The demand for old rails is exceedingly light, few sales are reported. We quote: $17.50 to $19.50—as to quality and delivery.

Old Wheels are dull, few sales being reported. We quote $17.50 to $18.

Scrap.—Wrought, $20 to $22; cast $12 to $14.

Pittsburg, Pa. August 13, 1878.

[Specially reported by A. H. CHILDS.]

There is no marked improvement to report in the condition of this market, but prices are well maintained, and holders show their confidence in the future by declining to contract ahead to any great extent.

	4 mos.		4 mos.
No. 1 F'dry	$19.00@$20.00	M. & White	$15.00@$16.00
No. 2 "	18.00@ 19.00	Hot Blast Ch.	20.00@ 23.00
Gray Forge	16.50@ 19.00	Cold Blast W.	35.00@ 37.00

Richmond, Va. August 13, 1878.

[Specially reported by ASA SNYDER, Esq.]

The demand for foundry grades of pig-iron, and for old rails, is improving. Considerable sales are also made of mill iron. I quote as below:

Amer. Scotch Pig Iron			$22.00@$23.00
Anthracite	" "	No. 1	19.00@ 20.00
"	" "	No. 2	18.50@ 19.00
"	" "	No. 3	17.00@ 18.00
"	"	Mottled	15.00@ 16.00
Coke	"	No. 1	19.00@ 20.00
"	"	No. 2	18.00@ 19.00
Va. Cold Blast Charcoal Pig Iron, cold short			19.00@ 22.00
" " " " " "		neutral	27.00@ 29.00
" Warm " " " "		cold short	18.00@ 20.00
" " " " " "		mill	17 00@ 18 00
Old Rails			16.00@ 17.00
Wrought scrap No. 1			17.00@ 18.00
Cast scrap—Machinery			17.00@ .....
Richmond Refined Bar Iron			2.00@ 2.10
Horse-shoes			4.25@ 4.50
Mule-shoes			5.50@ . ..
Old Dominion nails (standard size)			2.50 keg.

Freight by sail to New York, $1.60 for 2240 lbs.

St. Louis, Mo. August 13, 1878.

[Specially reported by Messrs. SPOONER & COLLINS, Commission Agents for all kinds of Iron.]

Pig-iron business, the past week, has been exceedingly dull. Prospects are fair, however, for a good fall trade. Prices remain, at present, the same as quotations, and we see nothing in the future to advance them. Old-rail business is quiet. There are very few of them in the market, and inquiries are very light.

COLD BLAST CHARCOAL—ALL NUMBERS.

Hanging Rock	$28@$33	Assorted Bar Iron	$1.75 rates.
Tennessee	25@ 30	No. 1 Wr'ght Scrap,	70c. cwt.
Kentucky	25@ 30	Heavy cast	60c. "
Missouri	25@ 30	Light "	40c. "
Georgia	25@ 30	Old rails	$19 00@$20 00
Alabama	25@ 30	Old carwheels	17 00@ 18 00

	No. 1.	No. 2.	Mill.	White and Mottl'd
Missouri stone coal	$22 00	$21 00	$19 00	$17 00
" charcoal	20 00	19 00	18 00	16 00
Tennessee charcoal	20 50	19 00	17 50	16 00
Tenn. coke very soft and strong	20 00	19 00	17 00	15 00
Hanging Rock charcoal	24 00	23 00	21 00	20 00
" " cold short	23 00	21 00	20 00	.....
	ExNo.1	No. 1.	BNo.1.	No. 2.
Alice Hanging Rock coke.	$23 00	$22 00	$21 00	$19 00
Moxahala Black Band ores	23 00	22 00	21 00	19 00

METALS.

NEW YORK, Friday Evening, Aug. 16, 1878.

Upon the whole the metal market shows no improvement, nor are there signs of an early revival to come. This branch of trade, however, is no worse off than most others and is not likely to show animation until a general revival of business sets in.

Gold Coin.—The price of gold during the past week has ranged from 100½ to 100¾ and closed at 100⅝.

RECEIPTS OF METALS AT NEW YORK FOR THE FOUR WEEKS ENDING AUGUST 15TH, AND YEAR FROM SANUARY 1ST, 1878.

	July 25	Aug. 1.	Aug. 8.	Aug. 15.	Year from Jan. 1
Copper, bbls	820	626	1,293	447	15,001
Copper, boxes	.....	.....	....	.....	113
Copper, cakes	11	659	660	172	11,038
Lead, pigs	6,575	6,423	7,680	5,945	210,559
Spelter, pieces	1,000	769	662	.....	29,962
Quicksil'r, flasks	100	.....	126	.....	909

Bullion.—Under the advancing interest rate in England silver has been declining during the past week reaching lower figures than we have had for a long time past. Should the money market there become easier, we should look for some improvement in the price of silver. The quotations are: London, 52⅝d; New York, 114⅝; and San Francisco, 10 per cent discount.

DATE.	London Pence.	N. Y. Cents.	DATE.	London Pence.	N. Y. Cents.
August 10	52⅝	114½	Aug. 14	52¼	114¼
August 12	52½	114½	Aug. 15	52 5-16	114¼
August 13	52⅝	114⅝	Aug. 16	52⅝	114⅝

BULLION SHIPMENTS.

We give below a statement showing the latest bullion shipments in addition to those announced in our issue of August 10th:

July	29, Star,	Nevada	$3,603.00
"	30, Indian Queen,	"	4,441.20
"	31, Tybo Cons,	"	14,540.68
Aug.	2, California,	"	79,968.37
"	2, Con. Virginia,	"	58,671.56
"	2, Gold Hill,	"	6,319.19
"	3, Northern Belle,	"	20,295.06
"	5, Independence,	"	12,116.06
"	6, Manhattan,	"	12,200.00
"	2, Standard,	California	19,563.21
"	3, Bodie,	"	93,085.83
	— Tiptop,	Arizona	12,020.03
"	5, Hackberry,	"	5,000.00
"	5, McCracken,	"	8,548.78
"	5, Black Jack,	Idaho	4,228.95
"	5, Monarch,	"	7,369.00
"	2, Butte,	Utah	10,234.21
"	6, Germania,	"	9,900.00
"	7, Old Telegraph	"	1,000.00
"	8, Silver Reef,	"	29,407.82

We note a recent shipment of base bullion from San Francisco for New York, amounting to 763,400 lbs.

The Peck Mine, Arizona, turned out during the month of July, $40,850.98 in bullion, or at the rate of half a million dollars per annum. The legal difficulties of this company so long existing, have all been amicably settled. It is estimated that the yield up to December 31st, 1878, will aggregate $3,000,000, and with plenty of water could be swelled to $4,000,000.

The Eureka (Nev.) District Bullion Yield for the month of July was $1,060,142.52, a falling off of $143,000 as compared with the June product.

The Miners' Delight Mine, Wyoming, recently made a shipment of gold to Cheyenne.

Specie Held by European Banks.—We take from the *Evening Post* the following statement showing the specie balances of the five leading European banks at the end of July, 1878, as compared with the same period last year :

	1877.	1878.
Bank of France	£88,123,000	£86,508,000
Bank of Germany	27,206,000	25,525,000
Bank of Belgium	4,187,000	3,697,000
Bank of Netherlands	12,546,000	9,629,000
Bank of England	26,742,000	21,960,000
Total	£158,804,000	£147,319,000

The writer of the above observes, in explanation of the present condition of sterling exchange: "Whatever may be the temporary course of sterling exchange, it seems inevitable that later in the season the exchanges will turn so strongly in our favor that we shall get gold from London even if we have to take a large amount of United States bonds, and we can say with confidence that specie exports are likely to be of short duration, the influences which restrict the supply of commercial bills being temporary. The trade exchanges may be temporarily disturbed by gambling operations in grain, but they run so strongly in favor of this country that it is only a question of a short time when they will assert themselves in our favor."

The *Daily Bulletin*, commenting on the above, makes the comparison of the specie in six of the leading European banks at the end of July last and at the end of July, 1876, and concludes that what these banks have lost has been on account of the retention, in this country, of gold that ordinarily would have been shipped to Europe.

	1877.	1876.
Bank of England	£21,960,000	£33,037,000
Bank of France	86,643,000	83,508,000
Bank of Germany	25,483,000	26,670,000
Bank of Austria	13,745,000	13,660,000
Bank of Netherlands	9,630,000	13,461,000
Bank of Belgium	3,643,000	5,497,000
Total	£161,104,000	£175,833,000
Decrease	14,729,000	

"This decrease of $75,000,000 in the aggregate stock of the metals in the six national banks so nearly corresponds with the decrease of $90,000,000 in the American supply as to suggest at once the connection of cause and effect."

The Bronze Coins of France.—The Baltimore *American* publishes a letter from its Paris correspondent, containing the following information in regard to the money of France: "The French sous, or pennies, and the double sous are made of bronze, and the quantity of them in circulation is immense. Among the lower classes it is the principal circulating medium. On the great *fête* days, when the price of admission to the Exposition was five sous, four wagon loads of this bronze money was sent to the Treasury next day, weighing about six tons. The passenger railway and omnibus conductors receive nothing but bronze money, and must have cart-loads brought in daily. While this is the case in Paris, it is even more extensively used in the country and smaller towns. The markets and small shopkeepers conduct their business largely with bronze money. Gold is more abundant than silver in the larger branches of trade, and Government notes are seldom seen of a smaller denomination than 100 francs, up to 500 and 1000. There would seem to be no need here for silver, as the gold five-franc and ten and twenty-franc pieces are abundant, and much more convenient and acceptable than silver money. The silver denominations are those of five francs, equal to our dollar; two francs, one franc, and a half franc, equal to our dime. Silver will never be used here except as a means of making change in purchases, or anywhere else where gold and redeemable paper are available."

The Postal Department as a Treasure Carrier.—SAN FRANCISCO, August 10.—Under instructions from Washington, the Post Office authorities are making preparations to transport $7,000,000 in gold from this city to New York as third class mail matter. Business men here are at a loss to understand the action of the Government, more particularly in view of the recent transactions in which the Government paid about $3,000,000 in New York to correspondents of San Francisco bankers, the latter paying a like amount, plus a small percentage, into the Sub-Treasury here.

Copper.—There have been small sales of Lake copper at 16c.@16⅛c. closing at 16c. 50,000 pounds of Baltimore copper reported sold at 15½c. Tennessee copper is quoted at the close at 15¾c.

The exports of copper from this port during the first seven months of this year were as follows :

To	Pounds.
Hamburg	2,447,027
Havre	4,603,933
Bremen	80,774
Antwerp	50,000
Amsterdam	33,750
Liverpool	12,107
Hong Kong	68,231
Total	7,295,822

Messrs. Vivian, Younger & Bond, of London, under date of August 2d, say :

"The markets for our leading articles have been quite as dull during the last month as they have been at all during the long period of depression through which we have been passing. It would seem that on the prospect of a settled peace, consumers and others had purchased somewhat in anticipation of an immediate revival of trade when peace was secured, and no such immediate revival having taken place, the natural demand from such buyers has not come in, and so prices have drooped, and stocks accumulated in a manner altogether unexpected. It must, however, be remembered prices are very low indeed, and that although no revival shows itself in the metal trade so far, consequent on the Treaty at Berlin, it is early days yet, and it is scarcely credible that with the necessary time for confidence to make itself felt in commerce, we shall not, to some extent at all events, see a general improvement in demand and an end to perpetually drooping markets."

Messrs. Vivian, Younger & Bond say of copper :

"A fair business has been done during the month in Chili bar copper from £65 down to £61 10s. for G. O. B.'s, closing dull at the latter quotation. A good deal of this alteration is due to the announcement that the Chilian Government had authorized the banks to suspend specie payments, and this news has had a most unsettling effect upon the market.

"The Swansea and Liverpool arrivals and deliveries of Chili bars, ores, and regulus in fine were as follows during

	July, 1878.	July, 1877.	July, 1876.
Arrivals	4,700	4,000	3,550 tons.
Deliveries	1,700	2,400	2,350 "

"The quantity of Chili bars, ores, and regulus in stock at, and afloat for, Liverpool, Swansea, and Havre, and of English and foreign copper in London, is thus estimated in fine copper :

	1st Aug., 1878.	1st July, 1878.	1st Aug., 1877.	1st Aug., 1876.
Stock	38,413	35,080	29,493	24,976
Chili produce shipping and afloat per mail advices	4,500	5,800	4,400	6,300
Total, tons	42,913	40,880	33,893	31,276
Chili produce chartered for per cable advices received up to date	4,400	3,850		
Australian produce afloat	1,400	500		

"Quotations of English tough and Chili bars, ores, and regulus were as follows :

	1st Aug., 1878.	1st Aug., 1877.	1st Aug., 1876.
Tough	£67 to £68	£74 10s.	£77 0s. per ton.
Bars	£61 10s.	£69 0s.	£72 0s "
Regulus	12s. 6.	14s.	14s. 6d. per unit.

"The actual exports of bars, ores, and regulus in copper from Chili during the first five months of the following years were as under—

1878.	1877.	1876.
19,300	20,450	21,600 tons."

Tin.—A good jobbing demand is reported. To-day's cable quotations are : Malacca tin in Singapore, $18.25, and at Penang $17.90, with exchange, at 3s. 10d. Malacca tin in London is quoted at £59 10s. Shipments from the Straits for the first half of August, by steamer, to the United States, were 200 tons. The quotations in this market are 13 7-8c. for Straits ; 14@14⅛ for Malacca, and 14c. for L. & F. There arrived during the week, by the *Greece* 1544 slabs of tin.

Messrs. Vivian, Younger & Bond say of Tin :

"At the Dutch Trading Co.'s sale on 31st July, 19,613 of Banca were sold, at from 39fl. up to 39fl. 50, average 39fl. 37, or equal to about £66 15s. per ton in warehouse in London.

"The stock of foreign tin in London and Holland is thus estimated:

	1878. July 1st.	1878. August 1st.	1877. August 1st.	1876. August 1st.
	Tons.	Tons.	Tons.	Tons.
Foreign tin in London	9,508	10,053	9,506	7,147
Banca tin in Holland	1,156	1,525	1,482	1,345
Ditto in company's hands	613	902	1,413	1,264
Billiton tin in Holland	1,600	1,695	1,606	900
	12,877	14,175	14,007	10,656
Quantity of tin afloat for Europe	4,200	3,500	3,000	3,000
Quotations on the same dates being for Straits	£62	£61 5s.	£66 10s	£73

Tin Plates are very quiet. We quote, per box, as follows : Charcoal tins, $5⅛@$6 and ternes, $5⅜@$5½ ; coke tins, $4.70@$5, and ternes $4⅝@4¾.

On the 20th inst. there will be sold in England 766 tons of Wallaroo coke.

Messrs. Robert Crooks & Co., of Liverpool, under date of August 1st, say :

"Tin and terne plates of all sorts have been very dead during the past month, and buying has been unusually restricted. Charcoal makers having almost worked off orders in hand, begin to show signs of giving way, and unless demand improves, will have to accept large reductions to obtain orders. Coke tins continue to be produced in quantities altogether too large for the very limited demand, and holders accordingly are weak and open to offers."

Lead.—We are reported sales aggregating about 500 tons at 3½c., which is the closing price.

The exports of lead to China for the first seven months of 1878 were 6760 tons, as against 8869 tons for the like period in 1877, and to Japan 895 tons, against 754 tons for the first seven months of 1877.

Mr. J. B. Meader's report shows that the production of lead in Utah during the first seven months of this year was 7,705,143 lbs. (3439 tons of 2240 lbs.) less than during the like period of 1877. The falling off in July of this year, as compared with the same month in 1877, was quite large.

The San Francisco *Commercial Herald* of August 8th says: "The Colima for New York, *via* Panama, carried 1,040,000 lbs. pig lead and 763,400 lbs. of base bullion."

Messrs. Vivian, Younger & Bond say of lead :

"The month commenced with a steady market, and a good demand, but this having been freely met, prices have receded about 5s. to 7s. 6d. per ton."

Spelter and Zinc.—Spelter is higher, being quoted at 4⅞@5c. A fair business from all parts of the country coupled with the unprofitable nature of producing at late prices, produces a disinclination among makers to contract ahead. Sheet zinc is quiet and unchanged, being quoted at 5¾c.

Messrs. Vivian, Younger & Bond say of spelter :

"The stock of spelter in London on 31st July, 1878, was 133 tons, against 109 tons end of previous month, and 117 tons 31st July, 1877."

Antimony.—This article is in moderate demand and quoted at 12@12¾c.

Quicksilver.—The San Francisco *Commercial Herald* of August 8th says : "As stated in our last issue, the Belgic, for Hong Kong, carried 1900 flasks. The Zealandia, for the Colonies, carried 104 flasks. Present spot stocks are light, and the market firm and steady at 42½c."

Salt Lake Ore and Metal Market.

SALT LAKE CITY, Utah, August 16, 1878.

Argentiferous Lead (*Base Bullion*), $22 to $25 per ton for lead; $1.13 to $1.15 per ounce for silver; $20 per ounce for gold. The quotations for silver are based upon the silver in the lead of 80 to 120 ounces per ton of 2000 lbs.

The *Inter-Ocean's* correspondent, under date of August 5th, says : "There have been sales of twenty cars of bullion, at $26 per ton for lead, and $1.13 per ounce for silver. There has been a sale of seventy-five cars of old Telegraph bullion at prices not made public.

"The shipments of ore, lead, and bullion, for the week ending August 3d, were as follows : Nineteen cars of bullion to Pittsburg, one car of bullion to Omaha, nine cars of lead to San Francisco, two cars of ore to Omaha, nine cars of ore to Hilliard. Bullion, 419,601 pounds ; lead, 184,976 pounds ; ore, 232,655 pounds ; total, 837,232 pounds."

FINANCIAL.

Miscellaneous Stocks and Quotations.

Sales and quotations of the stocks and bonds dealt in here, at Philadelphia and Baltimore for the week ending the 16th inst. are given in the following tables. The Philadelphia quotations will have a * affixed. The Baltimore quotations are indicated thus †.

STOCKS.	Par value.	High'st	Lowest	Closing	Sales : Shares.
American Coal Co.	$25	.....	.....	30	.....
St.L.,I.M.& S.R.Co..	100	6	6	5	150
Spring Mt. Coal Co.	50	.....	.....	50	.....
*Cambria Iron Co..	50	.....	.....	55	.....
*Penn. Salt Mf'g Co.	50	66	66	66½	5
*Westm'land C. Co.	50	.....	.....	60	.....
*Buck Mt. Coal Co..	50	.....	.....	35	.....
*Schuyl. Nav. Co...	50	.....	.....	.....	.....
†B.&O.RR.Co.1st pf	.....	.....	.....	95	.....
†B.&O.RR.Co.2d pf	100	.....	.....	85	.....
" " " " com	90	86	86	85	10
†George's C'k C. Co	100	.....	.....	86½	.....
†S. Clara M'g Co...	100	.....	.....	25c.	.....
†Atlantic Coal Co.	10	.....	.....	91c.	.....

BONDS.	Princ'l. When Due.	Int'est. When Due.	Hig'st.	Lowest	Amount.
D., L. & W., 7s, conv	1892	J. & D.	106½	.....	3,000
" " " " 2d mtge.	1881	M. & S.	.....	.....	.....
N.J.C.,1stmtge.new	1890	F. & A.	112	.....	6,000
" " " 1st mtge.,con	1899	Q.	86	.....	30,000
" " " convt.	1902	M. & N.	70	.....	*6,000
Lehigh & W. B., con	1899	Q.	58	55	†34,000
Am. Dock & Imp. 7s	.....	J. & J.	.....	.....	.....
St.L.I.M.& S..1st mt	1892	F. & A.	104¼	.....	1,000
Ches. & O., 1st mtge	1899	M. & N.	.....	.....	.....
D & H C Co.,1stm.rg	1884	J. & J.	100	.....	1,000
" " " " "	1891	J. & J.	.....	.....	.....
" " " " " m.loan cp	1894	A. & O.	102	.....	5,000
" " " " " rg.	1894	A. & O.	.....	.....	.....
" " " " " new mge.	.....	.....	.....	.....	.....
*L.V.R.,1stm.6s.cp.	1898	J. & D.	.....	.....	.....
" " " " rg.	1898	J. & D.	111	.....	2,000
" " " 2d m. 7s,rg.	1910	M. & S.	117	.....	5,000
" " " con.m.6s,rg	1823	J. & D.	99½	99	10,000
" " " " 6s cp.	1923	J. & D.	.....	.....	.....
*Pa.RR.,1st m.6s,cp	1880	J. & J.	104	103¾	4,000
" " g. m., 6s, cp.	1910	J. & J.	107	.....	6,000
" " " 6s, rg.	1910	A. & O.	108½	.....	10,000
" " con.m.6s,rg.	1905	Q.	.....	95¼	.....
" " " 6s, cp.	1905	J. & D.	95½	95¼	55,000
" " new loan, 5s	.....	.....	112	111	7,000
*P.& R. R., 1st m.6s, R. C. 43-44	1880	J. & J.	.....	104	.....
P. & R. R., 1st m. 6s, R. C. 48-49	1880	J. & J	.....	111	.....
P.& R. R.,2d m.7s cp	1893	A. & O.	.....	111	.....
" " " scrip	1882	J. & J.	60	.....	3,570
" " " in.m.7s,cp	1896	J. & D.	.....	.....	.....
" " " c.m.7s,cp.	1911	J. & D.	.....	103	.....
" " " " 7s. rg.	1911	J. & D.	.....	103¼	.....
" " " cvt.7s,R.C	1893	J. & J.	59⅞	.....	5,200
" " C.& I.Co.,Deb 7s, R. C.	1892	M. & S.	.....	.....	.....
& R.C.& I. Co., m. 7s, R. C.	'92-3	various	.....	.....	.....
L. Nav. Co.,6s,rg.m.	1884	J. & O.	.....	105	.....
" " RR., rg. m.	1897	F. & O.	103½	.....	150
" " cvt. co. G. R.	1894	M. & S.	.....	90½	.....
" " " Gold R. C.	1897	J. & D.	91¼	.....	500
" " con.m.7s,rg.	1911	J. & D.	.....	.....	.....
*P.& N.Y.C.,7s,R.C.	1896 / 1906	J. & D.	113¾	.....	1,000
*Pa Canal, 6s. cp..	1910	J. & J.	.....	58	.....
*Schuyl.Nav.,1st m. 6s. rg.	1897	M. & O.	.....	90	.....
*Sus.Coal, 6s, rg...	1911	J. & J.	75	.....	1,000
†Balt.&O. RR., 6s	1880	J. & J.	.....	.....	.....
" " " " 6s.	1885	A. & O.	.....	.....	.....

Total transactions for the week.....$196,420

* Assented. † 22,000 assented at 45.

New York Stocks.

NEW YORK, Friday Evening, Aug. 16, 1878.

A very fair business has been done in the coal stocks during the past week. In Delaware and Hudson there have been sales of 6311 shares at 47⅝@51¼, closing

COAL TRANSPORTATION AND GENERAL MINING STOCKS.

COAL STOCKS.

Name and Location of Company.		Feet on Vein.	Capital Stock.	Shares. No.	Shares. Par Val.	Assessments. Total levi'd to date.	Assessments. Date and amount per share of last. Mo.	Yr.	Amt.	Dividends. Total paid to date.	Last Dividend. Mo.	Yr.	Amt.	Rate per Ann.	Highest and Lowest Prices Per Share in Currency at Which Sales Were Made. N. B.—Quotations of D., L. & W. R. R., and Pa. Coal Co. are per $100—two shares. Aug. 10. H.	L.	Aug. 12. H.	L.	Aug. 13. H.	L.	Aug. 14. H.	L.	Aug. 15. H.	L.	Aug. 16. H.	L.	Sales.
			$		$100	$				$				Per c'nt													
Consol. Coal	Md.		10,250,000	102,500	$100	*					Jan.	1877	2½														
Del. & H. Canal	Pa.		20,000,000	200,000	100	*				38,821,104	Aug.	1876	4	9	50¼	50	50½	50	50¾	50	51½	50⅞	51⅛	47¾	48⅛	47¾	6,311
Del., Lac. & W. R. R.	Pa.		26,200,000	524,000	$50	*					July	1876	2½	5	52¾	51⅝	53½	52⅛	53⅜	52¼	53⅞	53¼	54	51	51⅜	50¾	105,150
Lehigh C. & Nav.	Pa.		10,448,550	208,971	50	*					Nov.	1876	1¾	5½	17¼	17¾					18¾	18½	18	17⅝	17¼		1,384
Lehigh Valley R. R.	Pa.		27,228,855	540,858	50	*					July	1878	1		38½	38¼	38⅝	38⅛	38⅞	38⅛	39¼	39¼	39¼	39	38¾		2,508
Maryland Coal	Md.		4,400,000	44,000	100	*					Jan.	1876	1½	1½													
N. J. Central R. R.	Pa.		20,600,000	206,000	100	*					Apr.	1876	2½	2½	34	32¾	35	33	34¼	32⅝	35	34¼	35	33¼	33⅜	33	10,850
Pennsylvania Coal	Pa.		5,000,000	100,000	50	*					May.	1878	3														
Pennsylvania R. R.	Pa.		68,870,200	1,337,404	50	*					May.	1877	1½	8	31¾	31½	32	31⅝	32⅜	31⅞	32⅛	32⅛	32⅛	32	32⅛		26,388
Phil. & Read. R. R.	Pa.		34,278,175	685,563	50	*				43,012,497	Jan.	1876	2¼+	10	16⅛	15¾	16¾	16⅛	16⅞	16½	17⅛	17	17⅜	16⅝	15⅝		28,972

GENERAL MINING STOCKS.

Dividend Paying Mines.

American	Col.		1,000,000	100,000	10	*				60,000	July	1878	$0	10	12														
Belcher, g. s.	Nev.	1,040	10,400,000	104,000	100	1,184,200	May	1878	1	00	15,397,200	Apr.	1876	1	00	12													
Bobtail, g.	Col.	2,500	1,136,630	227,326	5	*					56,831	Nov.	1877		25														
Bobtail Tunnel, g.	Col.		300,000	30,000	5	52,000	July	1873	0	30	40,000	Dec.	1877		50	20													
California, g. s.	Nev.	600	54,000,000	540,000	100						28,620,000	July	1878	1	00	24	12½		13¼	12⅝	13¼		13		12½				565
Calumet & Hecla, c.	Mch		2,000,000	80,000	25	1,000,000					12,650,000	Feb.	1878	5	00	20													
Central, c.	Mch		500,000	20,000	25	100,000	June	1862	0	65	1,260,000	Feb.	1878	5	00														
Chollar Potosi, g. s.	Nev.	1,400	2,800,000	28,000	100	1,610,000	Jan.	1878	3	00	3,040,000	Feb.	1872	1	00														
Copper Falls, c.	Mch		1,000,000	20,000	50	535,000	May.	1876			100,000	Nov.	1871	1	00														
Cons. Virginia, g. s.	Nev.	710	54,000,000	540,000	100	474,600	June	1873	3	00	40,500,000	June	1878	1	00	12	10¾		11	10¾			10				10		100
Confidence, g. s.	Nev.	130	2,496,000	24,960	100	256,320	Apr.	1878	0	50	78,000	May.	1865	8½	8½														
Cons. Her. & Roe	Col.	16,500	1,000,000	100,000	10	*					120,000																		
Crown Point, g. s.	Nev.	600	10,000,000	100,000	100	1,773,370	June	1878	1	00	11,588,000	Jan.	1875	2	00	24													
Eureka Cons., g. s. l.	Nev.		5,000,000	50,000	100	100,000	May	1876	1	00	2,350,000	May	1878	3	00	24													
Eureka G. Mg., g.	Cal.	1,680	2,000,000	20,000	100						2,149,000	Apr.	1878	0	25														
Franklin, c.	Mch		500,000	20,000	25	360,000	June	1876	5	00	585,000	Nov.	1871	1	00														
Gould & Curry, g. s.	Nev.	612	10,800,000	108,000	100	2,366,000	Apr.	1878	1	00	3,826,800	Oct.	1870	10	00														
Grand Prize	Nev.	1,500		100,000		100,000	July	1878	1	00	400,000	Feb.	1878	1	00														
Hale & Norcross, g. s.	Nev.	400	11,200,000	112,000	100	2,802,000	May	1878	0	50	1,598,000	Apr.	1871	5	00	12													
Hukill, g. s.	Col.	3,288	1,000,000	100,000	10	*					190,000	Aug.	1878	0	10	12			4.60						4.60				200
Kentuck, g. s.	Nev.	95	3,000,000	30,000	100	270,000	Dec..	1874	1	00	1,252,000	Mar.	1870	5	00														
Leopard, L. g. s.	Nev.	1,500	5,000,000	50,000	100	125,000	Apr..	1878		30	162,500	Dec.	1876	0	50														
Merrimac, s.	Mas.	1,500	500,000	100,000	5	*					120,000	Mar.	1878	0	10	12													
Minesota, c.	Mch.		1,000,000	20,000	50	436,000	June	1869	1	00	1,820,000	Mar.	1876	0	50														
Moose	Col.	39,000	2,000,000	200,000	10	*					200,000	Mar.	1878	0	25	10							3.10	3.05			3.15		600
National, c.	Mch.		500,000	20,000	25	195,000	Oct..	1875	1	00	360,000	Oct.	1873	1	00														
N. Y. & Colorado, g.	Col.		1,000,000	50,000	20	*					20,000	Mar.	1877	0	20		2			2					2		2.05		1,000
Northern Belle, s.	Nev.	1,600	5,000,000	50,000	100						1,425,000	Feb.	1878	1	00										10½				19
Ontario.	Uth.	3,000	10,000,000	100,000	100						1,450,000	July	1878	1	00	6	39¼	39⅛	38¼		38¼				38½		38½	38¼	685
Ophir, g. s.	Nev.	675	10,080,000	100,800	100	3,236,000	June	1878	1	00	1,394,400	Mar.	1864	4	00														
Pewabic, c.	Mch.		500,000	20,000	25	185,000	June	1868	3	00	460,000	July	1873	1	00														
Phœnix, c.	Mch.		1,000,000	20,000	50	817,500	Sept.	1870	3	00	20,000	Jan.	1876	1	00														
Plumas	Cal.		1,000,000	100,000	10						50,000	Aug.	1878		10														
Polar Star, g. s.	Col.	1,300	500,000	50,000	10	*					5,000	Jan.	1878	0	10														
Quincy, c.	Mch.		200,000	20,000	10						2,130,000	Feb.	1877	4	00														
Raymond & Ely, g. s.	Nev.	5,000	3,000,000	30,000	100	570,000	Apr..	1878	1	00	3,075,000	Sept.	1873	3	00														
Ridge, c.	Mch.		500,000	20,000	25	200,000					90,000	Feb.	1875	1	00														
Rye Patch	Nev.	1,600		30,000		97,500	Nov.	1876	0	50	105,000	Dec.	1877	0	25														
St. Joseph, L.	Mo.	2,000 acs.	1,000,000	100,000	10						250,000																		
Savage, g. s.	Nev.	800	11,200,000	112,000	100	3,860,500		1878	1	00	4,460,000	June	1869	3	00														
Seaton, g. s.	Col.	1,700	500,000	50,000	10	*	June				10,000	May	1877	0	10	12													
Sierra Nevada, g. s.	Nev.	3,650	10,000,000	100,000	100	1,950,000	May	1878	0	50	102,000	Jan.	1871	1	00	10													
Silver King											200,000	Feb.	1878	0	50														
Standard	Cal.			50,000		50,000	July	1878	1	00	450,000	May	1878	1	00														
Yellow Jacket, g. s.	Nev.	1,200	12,000,000	120000	100	3,678,000	Apr..	1878	2	00	2,184,000	Aug.	1871	2	50														

Non-Dividend Mines.

Allouez, c.	Mch.		1,000,000	20,000	50	940,000	May*	1876	5	00																			
Alpha, g. s.	Nev.	300	3,000,000	3,000	100	240,000	Mar.	1878	1	00																			
Am. Flag, g.	Col.	5,300	600,000	60,000	10	*											12c						15c						2,100
Bertha & Edith. g.	Vir.	645 acs.	3,500,000	350,000	10	*																	7c	6c	6c				7,000
Best & Belcher, g. s.	Nev.	545	10,080,000	100,800	100	438,590	Apr.	1878	1	00																			
Buckeye	Col.		2,000,000	400,000	5	*											34c	31c	33c		35c	34c			35c	32c	34c		17,300
Bullion, g. s.	Nev.	943¼	10,000,000	100,000	100	2,802,000	Jan..	1878	1	00																		33c	
Caledonia, g. s.	Nev.	2,188	10,000,000	100,000	100	1,440,000	May.	1878	0	50																			
Cashier	Col.		500,000	250,000	2	*																							
Cleveland, g.	Col.	3,715	250,000	25,000	10	*																							
Cons. Imperial, g. s.	Nev.	468	50,000,000	500,000	100	675,000	Apr.	1878	0	20																			
Con. N. Slope & E. C.T.	Col.	15,000	500,000	10,000	50	*																							
Dahlonega	Ga.		250,000	250,000	1	*											15c	13c	15c		14c		15c		15c	14c	15c		8,900
Dana, c.	Mch.		500,000	20,000	25	68,000	Jan..	1863	0	50																			
Dawson, s.	Ont.		1,200,000	60,000	20																								
Duncan, s.	Ont.		1,200,000	60,000	20	75,000	July	1876	41½																				
Exchequer, g. s.	Nev.	400	10,000,000	100,000	100	380,000	Jan..	1878	1	00																			
Gold Placer, g.	Col.		5,000,000	200,000	25												30c	25c			28c	26c				32c			3,900
Granville, g.	N. C.	357 acs.	1,000,000	100,000	10	*			0	50																			
Humboldt, c.	Mch.		500,000	20,000	25	100,000	Sept	1876	0	15																			
International, s.	Ont.		1,200,000	60,000	20																								
Julia, g. s.	Nev.	3,000	11,000,000	110,000	100	525,000	Jan..	1878	0	75																			
Justice, g. s.	Nev.	2,100	10,500,000	105,000	100	2,500,500	June	1878	1	00																			
King's Mountain, g.	N. C.		1,200,000	120,000	10	*																							
Lacrosse	Col.	3,900	1,000,000	100,000	10	*																							
Luzerne	Col.	4,200	5,000,000	500,000	10	*											29c	28c	30c	29c	29c	27c	27c		27c		28c		11,200
Madison, c.	Mch.		500,000	20,000	25	123,000	Sept	1876	0	10																			
Mariposa preferred	Cal.	44,387	5,000,000	50,000	100	1,425,000	June	1877	1	00									87½		2		2½	2					200
" common	Cal.	acres.	10,000,000	100,000	100	1,425,000	June	1877	1	00							50c		62½		60								400
Memphis	Col.	6,000	300,000	60,000	5	*																							
Mesnard, c.	Mch.		500,000	20,000	25	160,000	Apr.	1876	0	50																			
Mexican, g. s.	Nev.	600	10,080,000	100,800	100	217,400	May.	1878	0	50																			
Mt. Brosa Tunnel	Col.	8,600	2,000,000	200,000	10	*																							
Overman, g. s.	Nev.	1,200	3,840,000	38,400	100	3,173,880	Apr..	1878	3	00																			
Osceola, c.	Mch.		1,000,000	40,000	25	2,567,880	Nov.	1877	3	00																			
Petherick, c.	Mch.		500,000	20,000	100	165,533	Mar.	1876	0	50																			
Pleasant View, g.	Col.	1,200	200,000	20,000	10	*																							
Quicksilver preferred	Cal.	8,500	4,221,300			*																							
" common	Cal.	acres.	5,708,700	100,000	100																				30		33	31	400
Rockland, c.	Mch		500,000	20,000	25	495,000	Jan..	1874	1	00																			
Seg. Belcher, g. s.	Nev.	160	640,000	6,400	100	244,800	Apr.	1876	5	00																			
Silver City, g. s.	Nev.	3,900	6,310,000	63,100	100	15,775	Nov.	1876	0	25																			
Silver Hill, g. s.	Nev.	5,400	10,800,000	108,000	100	1,188,000	Apr..	1878	1	00																			
Star, c.	Mch.		500,000	20,000	25	265,000	Mar.	1876	0	50																			
Superior, c.	Mch.		500,000	20,000	25	340,000	Mar.	1874	0	25																			
Union Cons. g. s.	Nev.	350	10,000,000	100,000	100	310,000	Apr..	1878	0	25																			

g. Gold. s. Silver. l. Lead. c. Copper. * Non-Assessable. + A dividend of 3¼ per cent. was declared on the preferred stock of this Co. in July, 1876.

Total Assessment levied to date 51,072,342
Total Mining Dividends to date 228,227,333

Total Sales of Coal Stocks for the week ..... 181,563 shares
Total Sales of Mining Shares for the week ..... 54,560 "

at 48⅛; in Delaware, Lackawanna, and Western 105,150 shares at 54@50⅝, closing at 51⅛; in New Jersey Central, 10,850 shares at 35@32¾, closing at 33¾. The condition of the coal trade and its prospects have not had the effect upon the prices of these stocks that might have been expected, but it is evident that some of those who have been sustaining the market for more than a year are becoming alarmed.

Philadelphia Stocks.

PHILADELPHIA, Friday, August 16, 1878.

The business in coal stocks at Philadelphia, during the past week, exhibits but little change, either in volume or prices, as compared with that reported a week ago. About 60,000 shares comprise the sales, with the majority of quotations at the close rather lower.

Gas Stocks.

NEW YORK, Friday Evening, August 16, 1878.

We have no change to note in the quotations of gas stocks, prices remaining the same as last week, with no transactions.

Sullivan, Indiana.—The project of establishing gasoline works at this place has recently suffered a temporary defeat in the town board by a bare majority.

The Assessability of Gas-Works Property in Canada.—Judge Ross, in giving his decision in the Ottawa (Ontario) Gas Company's assessment appeal, held that the retorts, purifiers, gas-holders within the building, together with the mains in the streets, were real estate, and not personal property, as contended by the appellants, and, therefore, assessable as part and parcel in connection with property assessed.

New Gas Works at Richmond.—The new Philadelphia gas works, above Port Richmond, were formally opened on the 13th inst. Only one section is in operation at present, but in a few days the two other sections will be placed in working order. The new works will supply a larger quantity of gas to the northeastern section of the city, now somewhat deficient in that respect.

The Akron (Ohio) Oil-Lamp Troubles.—An injunction was served on the city on the 14th inst., to prevent the payment of bills for oil street lamp-posts, etc., which amount to twelve or fifteen hundred dollars. The petition for the injunction is signed by N. E. Van Sickle, representing some thirty of the heaviest tax-payers in the city. It alleges that the expenditure has not been legally made

Petroleum Gas-Works at Frederick, Md.—The building of the petroleum gas-works in Frederick has been commenced. The building will be of brick, 112×42 feet. The petroleum will be stored in an underground tank holding 6000 gallons.

Sale of the Napanee (Ont.) Gas-Works.—The Napanee Gas-Works were put up at auction on the 6th inst., according to announcement. $15,000 was set as a price on the works, and bids were then called for. Messrs. Goodwin, of Philadelphia, and Herring, of Napanee, bid as high as $5000, when the sale was postponed until the 5th of September next, buyers not being plentiful enough to make a profitable sale.

The Kansas City (Mo.) Gas Question.—A resolution has been adopted by the Common Council of this place, instructing the Gas Committee not to reduce the number of street lamps, as decided by previous vote of the Council, on the 5th inst.

Copper Stocks.

Reported by WILSON W. FAY & Co., Brokers in Mining and Miscellaneous Stocks, Room 7, Traveller Building, 31 State street.

BOSTON, Wednesday Evening, Aug. 14, 1878.

There has been no important change in the state of the market, although it has not been so dull and quiet as it was the last few weeks, and most of the stocks are firmer. There is no great disposition to trade either one way or the other, though the tendency seems to be to buy rather than to sell, with a few exceptions.

The fact that there is no second session of the board until September 1st has, also, the effect of making things rather quiet. Calumet & Hecla has sold at 180, and closes steady at 179@180.

Central is 28 bid, and no stock offering. Copper Falls remains steady at 1⅛@1¾. and sales at 1¾.

Franklin is firm, and in demand, at 6@6⅛, and sales at 6¼.

Osceola is rather soft, at 8⅛@10, and no sales.

Pewabic remains 1⅛ bid, and 2 asked, and no sales.

Quincy has been selling freely from 13 down to 12¾, and closes soft at 12¼@12¾, most of the stock being sold in large lots.

Ridge sold at 1¼, and is quiet at $1.00 bid, and 1⅜ asked.

Duncan sold down to $4.00, but sold up again to day to 4⅛ on the strength of a letter from the mine, but closes weaker at 4⅛@4 5-16.

International closes steady at .50@.60.

Copper Products for July.—We give below a statement showing the production of the reporting mines during the month of July, 1878.

	Tons.	Lbs.
Osceola	152	1049
Allouez Tribute	100	960
Calumet and Hecla	1336	1980
Mass	30	1270
Quincy	127	1080

The product of the Calumet and Hecla Mine for the first seven months of the present year has aggregated nearly 9170 tons of 2000 lbs., equal to 18,340,000 lbs. for this period, or at the rate of 31,440,000 lbs. for the year, which at 16c. per lb. would amount to over $5,000,000. This is surely a bonanza in copper, without as yet the first apparent sign of exhaustion.

Gold and Silver Stocks.

NEW YORK, Friday Evening, Aug. 16, 1878.

At the mining exchange there is practically nothing doing, except a small business among the brokers in the low-priced stocks. The public is letting alone most severely the mining stocks listed at our exchange, although it has by no means lost interest in mining investments. There are constantly being made private subscriptions to new mining enterprises, and considerable speculation is going on in the San Francisco stocks. The President of the Committee of Securities of the Mining Exchange, accompanied by an expert, is making a thorough examination into the merits of the several mines already on the list, and upon his return we look for a faithful account that may be of advantage to intending investors. We anticipate that when the report is made, many of the stocks will have to take a lower position on the list. We fear that before much life can be seen at the exchange, new stocks properly vouched for must be entered upon the list. There are several very promising mines that will probably become the properties of corporations now organizing, and the stock of the companies be offered the public afterward. Although the transactions in mining stocks have been a series of mistakes and have been a positive injury to the early development of an interest in mining, yet the great abundance of capital and the low rates of interest that have ruled in the East for several years are attracting and will continue to attract many investors to this profitable field for the employment of their money.

American is without a transaction, and the officers appear to have sensibly concluded to pay no dividend this month; 565 shares of California have been sold at 12⅛@13¼, and 100 shares of Consolidated Virginia at $10@$11; 200 shares of Hukill were sold at $4.60; 600 of Moose at $3.05@$3.15; 1000 New York and Colorado at $2@$2.05; 10 of Northern Belle at $10½, and 685 of Ontario at $39¼@$38¼. In the low-price stocks there has been but little done and that little only among the brokers. The sales have been 2100 shares of American Flag at 12@15c.; 7000 Bertha and Edith at 7@6c.; 8900 Dahlonega at 13@15c.; 3900 Gold Placer at 25@32c.; 11,200 of Lacrosse at 29@27c., and 17,300 of Buckeye at 31@35c. In the last-named stock there is manipulation in progress that may result in giving this stock a prominent position among the low-priced stocks. There are rumors of marvelous discoveries that have been made on the properties of the company, and estimates of vast wealth that will be extracted. To these reports, however, we shall give no credence, but await such disinterested information as we may reasonably expect in a short time. We have from time to time questioned the transactions in Plumas, although at no time having an unfavorable report from the mine. Where a few weeks ago the transactions weekly amounted to from 6000 to 8000 shares, there were more last week. A New York *Times* correspondent lately visited the mine, and confirmed, in a general way, the report made by the officers. We have had private information of the same nature.

Mariposa Land and Mining Co.'s stock shows a slight improvement, the preferred stock selling at from 87½c. to $2 per share, with sales of 200 shares, and the common stock advancing to 62½c., the transactions in this amounting to 400 shares. In the case of Donahue against this company, Judge Morrison, of San Francisco, granted, on the 9th, the motion of the defendant for the appointment of a receiver with power to work the property, funds for that purpose to be furnished by the company.

SAN FRANCISCO MINING STOCK QUOTATIONS.
Daily Range of Prices for the Week.

NAME OF COMPANY	CLOSING QUOTATIONS						Opening
	Aug. 9.	Aug. 10.	Aug. 12.	Aug. 13.	Aug. 14.	Aug. 15.	Aug. 16.
Alpha	14¾	13⅜	14⅝	13⅜	11¾	12⅛	14⅛
Belcher	8⅛	8⅛	9⅜	9¼	8⅜	8⅞	9¼
Best & Bel.	18¾	18⅜	19¾	18	17	17¾	18
Bullion	8¾	9	8⅞	8⅞	7⅞	9⅜	.....
Caledonia	3⅜	3⅜	3⅝	3⅜	2⅜	2¾	.....
California	11⅞	12⅜	12¼	12	11¾	*11⅛	11
Chollar-Pot	37¾	37	38¼	35	32	34½	37
Con. Imp	.....	.....	.....	.....	.....	.....	.....
Con. Va	9⅞	10	9⅞	9⅜	9	9¼	.....
Confidence	5¾	6	6⅜	5⅝	5	5	.....
Crown P'int	9⅝	10¼	11¾	10⅜	9⅛	9¼	9⅛
Eureka Con	45	.....	.....	.....	42½	42½	42½
Exchequer	5	5⅛	6	5⅛	4⅛	5⅛	.....
Gould &Cur	10⅛	10⅜	10⅝	9⅝	8¼	9	9
Grand Prize	4⅝	.....	6	6⅛	5⅜	5⅝	.....
Hale & Nor.	10⅜	10	10	9⅜	8	8⅞	9
Julia	10⅝	11⅜	12⅞	12¾	12⅛	14⅞	.....
Justice	6⅞	6⅛	6¼	6⅛	5⅞	6⅜	6½
Kentuck	5⅛	5⅞	6¾	5¾	4¾	4⅞	.....
Mexican	19	23¾	24¼	22⅞	20⅝	22⅝	22
North. Belle	.....	.....	10⅝	11	11¼	11	.....
Ophir	43¾	44¼	47¼	45¼	43	44⅛	44
Overman	16¼	15¼	15⅞	14⅜	12⅛	13⅜	12⅛
Ray. & Ely.	3	.....	3¼	3⅜	4¼	5	5
Silver Hill	1⅞	.....	1⅝	1½	1⅛	1¼	.....
Savage	13⅞	13⅛	13⅞	13⅝	11¾	12⅛	12
Seg.Belcher	31	34	.....	33	.....	.....	.....
Sierra Nev.	25⅛	27¼	29¾	29⅛	28	33	33⅛
Union Con.	23	27⅝	25½	25¼	23¼	24⅜	25
Yel. Jacket	13⅜	14⅝	15⅞	15⅛	13½	13⅜	13⅛

*Ex. Dividend.

With but a few exceptions, the quotations in the above list have been firmly maintained throughout the dealings of the week. The market is reported very active, and the buoyant feeling noted in our last seems to pervade all the transactions.

The New Bonanzas, Union Consolidated and Sierra Nevada, open to-day at nearly the highest point of the week—the former at $25 per share, and the latter, $33⅛. It is believed that these stocks will hold the same place in the speculative position that was recently held by Ophir and Mexican, though there is no apparent weakness in these latter stocks; and if the former desires the confidence of the public, that public should be put into the possession of all the facts relative to the ore-body which these companies jointly claim, and into the mysteries of which investors are induced and invited to blindly place their faith and their money. Nothing of importance has transpired in the "old Bonanzas," the bullion yield is very light, that of the California amounting to about 250 tons per day, and of the Consolidated Virginia 40 tons. This light output suggests the possibility of the necessity of an assessment, in the near future, to meet the expenses caused by the large amount of dead work which the company is now vigorously prosecuting. Eureka Consolidated is lower, opening at $42½ per share, against $45 a week ago. It is rumored that the Nevada Bank is striving for the control of this mine, having already secured 7000 shares. Grand Prize shows an advance; on the 13th inst. it was quoted at $6½, but closed yesterday at $5⅝.

The *Virginia City Enterprise* takes the following encouraging view of the situation on the Comstock: "The general impression is that all stocks of merit will go much higher. The strike in the Sierra Nevada has been made at a depth that corresponds to the 2200 levels of several of the leading mines at this end of the lode, therefore shows that depth is no hindrance to the formation of bonanzas. This being the case, all are turning with new interest to the many mines in which they are now about ready to cross-cut at depths ranging from 1800 to 2400 feet. Never before have so many mines along the entire length of the Comstock been ready at about the same time to do deep and promising prospecting. The result of what many mining companies have been working years to attain is now soon to be seen. This is particularly the case in the Gold Hill section of the Comstock. The Belcher and Crown Point companies have at last arrived at a point which it has cost the labor of several years and the expenditure of vast sums of money to reach, and to the northward is the Yellow Jacket and Imperial, with the Alpha and a whole group of mines that are now about ripe for the work of thorough exploration. The Savage and Hale & Norcross are being prospected at the depth of 2100 feet, the Julia at 2000, and the Gould and Curry and Best and Belcher at the depth of 1950 feet. The Ophir Company—whatever they may have on the 2000 level—will soon reach their ore-body at a depth of 2100 feet. Through this mine and the Sierra Nevada the Mexican and Union Consolidated mines may readily be tapped at the depth of 2100 feet. At the south end, the Overman, Caledonia, Lady Washington, New York, Alta, and Justice are all in a position to do good work at prospecting."

Indications point to the probability of the mines of the Bodie district soon becoming prominent features in the dealings on the San Francisco Mining Board. All of the stocks in this district which are placed on the list have largely advanced with very liberal transactions. Certain it is, if we may believe half the statements going through our exchanges, these mines have a brilliant future before them. An evidence of the value of profitable mining and the future prospects of these mines is furnished by the determination of some San Francisco capitalists to establish a bank at Bodie, to be called the Mono County Bank, with a capital of $100,000. A dispatch, dated Victoria, British Columbia, August 4th, 1878, says:

A syndicate of English capitalists has been formed to open the Cariboo quartz reefs, where prospecting is progressing satisfactorily.

By a proclamation in the Government *Gazette* the public lands from Burrard Inlet, *via* the Fraser River to the Rocky Mountains, are reserved for railroad purposes.

The Standard Mining Co has declared a dividend of $1 per share.

The Reddington (Cal.) Quicksilver Mine has declared a dividend (unwatered) on its capital stock of $120 per share, the largest it has ever made, and one of the largest on record. A stockholder in Napa receives $25,000 as his share.

ASSESSMENTS, with dates when delinquent: De Frees, 10 cents, September 6th; McClellan Con., 25 cents, September 5th; Colorado River Copper and Gold, 25 cents, September 9th; Boyle, 15 cents, September 4th; Benton, 35 cents, September 5th; Belmont, 40 cents, September 2d; Kentuck, $1, September 9th.

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Leave Philadelphia from station North Pennsylvania Railroad, Third and Berks Streets, at 6:45 (way), 7:45, 9:30, 11:30 A. M., 1:30, 2:30, 4:15, 5:45, 12:00 P. M.

Leave Trenton for New York at 1:20 (daily, except Monday), 6:40, 8:13, 10:20 A. M., 12:15, 2:15, 3:00, 4:55, 6:30 P. M.

Sunday Trains leave New York and Philadelphia, at 9:00 A. M., 5:30, 12:00 P. M. Leave Trenton for New York at 1:20, 9:50 A. M., 6:10 P. M.

Pullman Drawing Room Cars are attached to the 9:30 A. M., 5:30 P. M., trains from New York to the 7:45 A. M., 1:30 P. M. trains from Philadelphia.

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$500.00 REWARD.

The public are informed that on the 16th day of last month a gentleman, accompanied by a lady, entered the ticket office of the MISSOURI, KANSAS and TEXAS RAILWAY at HANNIBAL, MO., and purchased of the Ticket Agent two first-class tickets, reading from Hannibal, Mo., to DALLAS, TEX. They also inquired if there was a sleeping car running direct through. The Ticket Agent informed them that there was, and that it would leave in a few moments. They then asked if the Sleeping Car passed through DENISON and SHERMAN, TEX. The Ticket Agent answered that it did, and was just about to hand the party a map and time table of the famous INDIAN TERRITORY ROUTE TO TEXAS, when the lady broke out, "See here, Mister Ticket Agent, I have heard and I have read a great deal about this MISSOURI, KANSAS, AND TEXAS RAILWAY and the B. I. T., and I want you to tell me the truth before we take that train. Is it true that there is only one railroad in the United States that passes through the B. I. T., and is it true that the name of that road is the M., K. and T., and is it true that everybody takes it, and that it ENTERS TEXAS AT DENISON?" "Madam," says the Ticket Agent, "I am proud to say it is all true, the M., K., and T. R'y is the only line that ENTERS TEXAS AT DENISON, and the only line running SLEEPING CARS to SHERMAN and DALLAS, TEX, and"—just then the bell rang; the parties made haste to the train, which was in a moment whirling on its way to TEXAS and the far-famed Indian Territory, while the HANNIBAL Ticket Agent walked the floor of the M., K., and T. TICKET OFFICE racking his brain, trying to make out what "she" meant by "B. I. T." He never stopped to think that every day in the week he was asked from 200 to 300 times, "Give me a ticket to DALLAS, or FORT WORTH, or DENISON, or SHERMAN, or HOUSTON, through the BEAUTIFUL INDIAN TERRITORY," which last three words the lady abbreviated. Reader, if you are going to TEXAS, try the route through the Beautiful Indian Territory. It is the PANORAMIC ROUTE TO TEXAS.

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